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A QUANTITATIVE INVESTIGATION INTO THE BUSINESS CASE FOR DIVERSITY IN THE BOARDROOM: A MULTI-THEORY FRAMEWORK

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A QUANTITATIVE INVESTIGATION INTO THE BUSINESS CASE FOR DIVERSITY IN THE BOARDROOM: A MULTI-THEORY FRAMEWORK

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ABSTRACT

The past two decades have witnessed unprecedented governance failures coupled with the 2007/8 financial crisis. This highlighted inherent problems that were created by 'groupthink', where directors made decisions as a group with no one to challenge them or to offer different perspectives. The board of directors of a company has a fiduciary duty to provide oversight and protect shareholders' interests, however governance failures suggest that not every board is well equipped to perform this critically important duty. Drawing on the business case, this study examines whether board diversity enhances the decision-making process and positively impacts financial performance. The study integrates agency, resource dependence and upper echelons theories in order to overcome the current myopic single based theory perspective, providing a more complete understanding of the relationship between board diversity and financial performance. On a global level, most of the studies regarding this topic are also focused on gender composition of the board. However, what makes this study different is the theoretical framework developed which allows both structural and demographic issues of diversity to be explored simultaneously. These are measured in terms of gender, age, education, experience, networks and board practices.

Drawing on a positivist ontology, data on board diversity is gathered from a sample of the FTSE 350 companies in the UK from 2004 to 2014. In order to address the endogenous nature of corporate governance, a two-stage least squares estimation with instrumental variables is applied, using Tobin's Q, return on equity and return on assets as measures of financial performance. Results from the multivariate analyses reveal that gender diversity, experience diversity and multiple directorships are significantly and positively associated with financial performance. However, in contrast to existing theory, the results reveal that directors' age, education, experience levels and board practices have no association with financial performance. This indicates that the effects of board diversity on firm performance are mixed.

In addition, an industry analysis of the findings reveals that 'one size does not fit all' and, in particular, this analysis displays a much stronger business case for board diversity in the mining and quarrying industry than in other industries. Therefore, the study provides empirical support for the importance of contextual factors between board diversity and performance. The findings from this study confirm the need to utilise theoretical paradigms that combine multiple theories when assessing the link between board diversity and financial performance, thus justifying integration of agency, resource dependence and upper echelons theories. The study furthermore provides empirical support of a business case for gender diversity, experience diversity and multiple directorships on boards, as well as offering insights to policy makers in formulating recommendations related to desirable characteristics of boards. Board members, nomination committees and shareholders can also benefit from these findings in creating boards that are well suited to perform their duties and in advancing the diversity agenda.

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List of Acronyms

2SLS – Two Stage Least Squares

3SLS – Three Stage Least Squares

BLUE – Best Linear Unbiased Estimator

CG – Corporate Governance

EPS – Earnings per Share

GLM – Generalised Linear Model

GLS – Generalised Least Squares

GMM – Generalised Method of Moments

NEDs – Non-Executive Directors

NPM – Net Profit Margin

OLS – Ordinary Least Squares

Q – Tobin's Q

RMSE – Root Mean Square Error

ROA – Return on Assets

ROE – Return on Equity

SIC – Standard Industrial Classification

UK – United Kingdom

US – United States

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Glory be to God!

Dedication

This thesis is dedicated to my father Dr C Murefu, my mother Mrs B Murefu and my husband Tinashe C Bwanya.

Declaration

I declare that the work contained in this thesis has not been submitted for any other award and is entirely my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others. Any ethical clearance for the research presented in this thesis has been approved.

Approval was sought and granted by the School Ethics Committee on the 7th of January 2015.

I declare that the word count of this thesis is 75, 684.

Name: Princess Bwanya

Signature

Date: 7 January 2019

CHAPTER 1 INTRODUCTION

1.1 Introduction to Chapter

"…a commitment to equal opportunities...is inevitably undermined if the board itself does not follow the same guiding principles…" (Higgs, 2003, p. 42**)**

Corporate governance has seen its greatest developments and reform in the last two decades, however, those decades have also been characterised by unprecedented governance failures coupled with the 2007/8 financial crisis. These failures highlighted inherent problems that were created by 'groupthink', where directors made decisions as a group with no one to challenge them or to offer different perspectives (Ararat, Aksu, & Tansel, 2015). In spite of the progress in corporate governance reform, corporate boards in the UK, US and other countries remain dominated by older white males (Wang & Clift, 2009). Scholars suggest that this homogeneity of corporate boards raises important ethical, social, political and economic issues. This study examines the business case for diversity in the boardroom through adopting a multi-theory framework. Specifically, the study intends to present robust evidence on the relationship between board diversity and firm[1] performance and add to the extant literature in advancing the diversity agenda. This chapter introduces the thesis overall and provides an overview of the background and importance of this study.

The chapter is structured as follows: Section 1.2 provides the background of the study including an outline of the development of corporate governance in the UK. Section 1.3 discusses the rationale and motivations for conducting this thesis, whilst section 1.4 presents the research objectives and research questions for the thesis. Section 1.5 discusses the potential contribution to knowledge and practice of this

[1] The term firm in this thesis refers to a company.

study, whilst Section 1.6 provides an overview of the structure of the entire thesis. Finally, Section 1.7 summarises this chapter.

1.2 Background to Research

Good corporate governance is comprised of different mechanisms and practices that aim to ensure the accountability of corporate directors and corporate management (Brammer, Millington & Pavelin, 2007). Similarly, Mallin (2016) notes that the aim of corporate governance codes and codes of best practice is to encourage better transparency and accountability in firms alongside increasing the confidence levels of investors in the firm. In this regard, the UK is considered as one of the leading countries in corporate governance development and reform (Goergen, 2012). The development of corporate governance internationally is said to have begun in the United States (US) in the mid-1970s when the Federal Securities and Exchange Commission officially introduced the term corporate governance in their register (Cheffins, 2013). In the United Kingdom (UK) however, the term corporate governance attracted little attention and was rarely used before the 1990s. For instance the newspaper The Economist, refrained from using the term until 1990 (Cheffins, 2013). The biggest development and catalyst of corporate governance reform in the UK began in 1991 when the accountancy profession, the London Stock Exchange and the Financial Reporting Council founded the Committee on the Financial Aspects of Corporate Governance that produced the Cadbury Report. The 25th anniversary of the Cadbury code, which formed the basis of corporate governance in the UK and in other countries, has recently passed in 2017. In addition, the UK is regarded and widely recognised as one of the world leaders in corporate governance reform (Veldman & Willmott, 2016). Mallin (2011) notes that since the Cadbury code's development, many amendments have been made to the codes of best of practice, most of which are aimed at enhancing the role of directors and restoring public confidence in firms and in the stock markets.

Cheffins' (2013) examination of the history of corporate governance notes that corporate governance issues were not largely discussed in the economics and finance literature until the 1980s with most of these studies focusing on the US market.

Seminal work by Jensen and Meckling (1976) and Fama (1980) did however address agency theory and agency problems, which are the foundations of corporate governance literature. A study by Van Ees, Gabrielsson and Huse (2009) states that the focus of corporate governance problems has historically been on conflicts of interests or allocation of resources in firms. However, they emphasise a much wider focus on the creation of knowledge and coordination of agents, which implies that more attention should be paid to the analysis of directors' skills and abilities (Van Ees et al., 2009). This is in line with the issue of board diversity, which Lopes, Ferraz and Martins (2016) argue is one of the most significant issues facing modern firms. Board diversity has also been the subject of discussion in some of the codes of best practice in the UK. For instance, the Higgs report (2003) looked at the role and effectiveness of non-executive directors and noted that the population of non-executive directors, at that time, was drawn from a narrow pool of people. In addition, a key statement made in the Higgs report regarding diversity was that "…*the qualities necessary for an effective contribution to the board can also be acquired from a variety of backgrounds. The interplay of varied and complementary perspectives amongst different members of the board can significantly benefit board performance*..." (Higgs, 2003, p.42). The main argument in favour of increased board diversity is that the effectiveness of the board should improve with a wider mix of skills, perspectives and backgrounds, and this turn should lead to increased firm performance (Post & Byron, 2015).

Initially, research on team or group diversity largely focused on top management teams and senior management in the extant organisation and management literature (Dahya, Dimitrov & McConell, 2008). However, in the aftermath of unprecedented financial scandals, governance failures and the financial crisis, attention has shifted into the effectiveness of the functions and roles of the board of directors (Reguera-Alvarado, de Fuentes & Laffarga, 2017). In this regard, board diversity has been considered as a vital mechanism for improving the effectiveness and decision-making processes of corporate boards (Kuhç & Kuzey, 2016). Grosvold, Brammer and Rayton (2007) suggest that board diversity has also grown to be of importance for several reasons. These include diversity screens that have been employed by some institutional investors in their commitment to diversity in the work place, concerns and aspirations by different stakeholders groups such as employees and customers, and the

inclusion of board diversity discussions as part of best practices in corporate governance (Grosvold et al., 2007). Board diversity as an area of research is also gaining importance due to the mandate of increasing the number of women on boards that many countries have adopted in recent years (Kagzi & Guha, 2018). For instance, in 2013, the Ministry of Corporate Affairs in India, mandated the presence of at least one female director on the corporate board of listed companies (Chapple & Humphrey, 2014). In Europe, from the year 2006, large firms in Norway were required to have at least 40% of their boards comprised of female directors and, in 2012, the large firms in Norway had an average of 42% female directors on their boards (Marinova, Plantenga, & Remery, 2016). Although the majority of government considerations and prior research has placed greater focus on gender diversity, board diversity encompasses a wide variety of attributes. Van der Walt and Ingley (2003) broadly define board diversity as the different attributes that may be represented by directors on the board including age, gender, ethnicity, culture, religion, community representation, knowledge, educational background, professional background, independence, expertise, prior commercial, industry, career, life experience and technical skills.

1.3 Rationale for Research

The case for diversity in the boardroom is mainly centred on two arguments, which are the ethical case versus the business or the economic case (Campbell & Mínguez-Vera, 2008; Hagendorff & Keasey, 2012; Van der Walt & Ingley, 2003). An earlier report by Brancato and Patterson (1999) noted that a former executive vice president of the Bank of America highlighted that there is much debate between those who propose firms should be diverse because it is the right thing to do and others who propose that diversity enhances shareholder value. Further to this, the CEO of a real estate firm and a director of an industrial firm was quoted in an interview by Dvorak (2008, p.4) stating, "…*When I'm sitting in that boardroom, my fiduciary responsibility is to the shareholders of that company – not social engineering. I can talk about diversity. But there ought to be a business case…"*. The business case for diversity suggests that directors with different perspectives, backgrounds and skills have unique attributes that are beneficial to firms in enhancing firm value and improving firm performance (Hagendorff & Keasey, 2012). Carter et al. (2010) argued that it is

important to have a good understanding of the relationship between board diversity and firm performance as this can have various significant implications for the corporate governance practices of firms and for public policies. On one hand, if board diversity does not influence or impact board processes and firm performance, then the agenda for increasing diversity in the boardroom rests on the ethical argument and is a matter of public policy. On the other hand, if board diversity positively impacts board processes and firm performance, then the business case for diversity can be strongly considered in advancing the diversity agenda (Carter et al., 2010). Interestingly, from a public policy perspective, the European Commission proposed that by 2020, 40% of non-executive board positions should be occupied by female directors (European Commission, 2012a). However this proposal was not motivated by equity considerations or the ethical arguments, rather, it openly refers to the business case for gender diversity, and suggests that gender diversity improves firm performance (Marinova et al., 2016). Therefore, both the academic literature and public policy recognise the importance of examining the link between board diversity and firm performance in order to provide empirical evidence as to whether there is a business case for diversity in the boardroom.

The ethical case for board diversity emphasises the inequality associated with excluding groups of individuals on the board on the basis of gender, race, age or other related characteristics (Campbell & Mínguez-Vera, 2008). In addition, the ethical case seeks to empower members of society whom have historically been excluded from positions of power such as on the corporate boards of firms (Hagendorff & Keasey, 2012). In this regard, board diversity is associated with equality of representation and, the notion of the ideal of 'fair' outcomes in society (Brammer et al., 2007). The business case for board diversity, on the other hand, proposes that diversity enhances the abilities of directors to perform their board functions, especially when engaging in complex problem solving, strategic decision making and monitoring managers (Wang & Clift, 2009). Carter, Simkins and Simpson (2003) suggest three main reasons to explain why board diversity can improve firm performance, allowing a business case to be drawn upon. First, they suggest diversity can promote a greater understanding of the market because the market itself has become diverse. Therefore, board diversity can increase a firm's ability to penetrate the market by matching its board to the

stakeholders in the market. Second, the different attributes and cognitive function of a diverse board can increase innovation and creativity. Lastly, a variety of perspectives from diverse directors can enhance the decision-making process of the firm by a better understanding of the business environment and through considering different alternatives in the process (Carter et al., 2003). An article on moving the board diversity field forward by Adams et al. (2015) states that regardless of the effects of board diversity, it is the subject of discussion in public policies globally, which makes it crucial for academic research to provide empirical evidence on the role board diversity plays.

Although there are various reasons to suggest that diversity is a key mechanism of good corporate governance practice and of board effectiveness, the majority of corporate boards remain largely homogenous in their composition (Catalyst, 2015; Dhir, 2015). At the same time, the academic literature investigating the relationship between board diversity and financial performance is still quite limited according to Marinova et al. (2016). Research examining diversity in the boardroom has predominantly focused on gender diversity with fewer scholars examining other aspects of diversity such as age, educational background and experience (Ben-Amar et al., 2013; Kagzi & Guha, 2018). Further to this, the studies that examine the impact of gender diversity in the boardroom within the European context have produced less positive results, which has raised questions on the driving mechanism behind this relationship (Smith, Smith & Verner, 2006; Terjesen, Sealy & Singh, 2009). Consequently, Marinova et al. (2016) proposed that more research should be conducted within Europe on the link between board gender diversity and firm performance with an application of more sophisticated methodologies. This is in order to provide empirical evidence on the business case argument within the European context and to add to the European policy debate (Marinova et al., 2016). Similarly, Mahadeo, Soobaroyen and Hanuman (2012, p.385) called for further research to be conducted on what they call "…*the continuing debate of the desirable features of a successful board*…". Therefore, this thesis draws on the business case for diversity and examines whether various aspects of board diversity enhance the decision-making processes of boards and, positively impact financial performance

1.4 Research Objectives and Research Questions

The main objective of this research is to investigate the relationship between board diversity and financial performance in listed companies within the UK context. Board diversity is now considered as an integral part of good corporate governance according to Kuhç and Kuzey (2016). Therefore, the UK provides a fertile setting in which to investigate this relationship as it has been at the forefront of the development and reform of some of the most influential corporate governance practices worldwide. This thesis intends to present robust evidence and explore the potential determinants of board diversity from UK corporate firms. Although, the focus of this study is on the business case for board diversity, the results may also provide some insights on the ethical case for board diversity. The study's sample consists of 198 companies that were consistently listed on the FTSE 350 between the years 2004-2014. Therefore this study's main research objective is:

- To examine the impact of board diversity on the financial performance of FTSE 350 companies in the UK.

The research objective mentioned above will be achieved by answering the following three research questions:

- *Research question 1*: Which theoretical framework is the best modelling tool of board diversity and financial performance?

- *Research question 2*: Is there a relationship between board diversity and financial performance?

- *Research question 3*: Does the relationship between board diversity and financial performance differ amongst industries?

The first research question seeks to identify a theoretical framework that addresses the different functions and roles played by the board of directors. In addition, the study aims to utilise and develop a theoretical framework that allows both structural and demographic issues of diversity to be explored simultaneously. These will be measured in terms of directors' gender, age, education, experience, networks and board practices, these variables relate to the second research question. Research question 3 attempts to explore any differences amongst industry sectors in line with the notion 'one size does not fit all' (Mikes & Kaplan, 2015).

1.5 Contribution of Study

This thesis aims to contribute to knowledge and practice in the following ways:

First, this thesis seeks to contribute to knowledge by adopting a multi-theory framework to assess board diversity and financial performance. The extant literature notes that directors play multiple roles on boards which include a resource provision role, monitoring and control role, oversight role, advisory and strategic roles (Nahar-Abdullah, 2004; Campbell & Mínguez-Vera, 2008). However, there is no single theory in corporate governance that addresses each of these functions in examining the link between board diversity and firm performance (Ali, Ng & Kulik, 2014). Therefore, Kagzi and Guha (2018) suggest that it is more beneficial to utilise a multi-theory framework that encompasses different dimensions of diversity and addresses the different roles and functions of the board of directors. This study integrates agency, resource dependence and upper echelons theories in order to provide a more holistic theoretical lens in assessing board diversity. To the best of the researcher's knowledge, this is the first study to integrate these three theories.

Second, this thesis aims to contribute to knowledge by examining both demographic and structural issues of board diversity simultaneously. In regards to structural diversity, the majority of prior corporate governance studies have largely focused on assessing CEO duality and board independence as proxies of structural diversity (Nicholson & Kiel, 2007). Ben-Amar et al. (2013) articulated that structural diversity refers to the recommendations and guidelines set out in governance codes and codes of best practice. Therefore, rather than focusing solely on board

independence and CEO duality, this study examines other aspects of board practices that are considered best practice by the UK governance codes. This will be done by constructing a board index based on the codes of best practice, which will be tailored to UK firms and allows the study to focus on a much wider scope of structural diversity. With regards to demographic diversity, Nicholson and Kiel (2007) observed that an important question remained unanswered in corporate governance research, which was whether differences in human capital, such as skills and expertise, of boards are related to corporate performance. The majority of prior studies that have examined the demographic diversity of boards have largely focused on either gender or ethnic diversity (Carter et al., 2010; Low, Roberts & Whiting, 2015). Therefore, this study seeks to contribute to the extant literature by examining other aspects of board diversity that have not been commonly included in prior studies, such as age diversity, educational background and directors' prior experience.

Third, this thesis aims to contribute to the existing body of knowledge by implementing econometric approaches that have not been extensively used in prior corporate governance literature. Marinova et al. (2016) point out that the majority of previous corporate governance studies suffer from the problem of endogeneity and therefore when examining board diversity and firm performance a methodology that addresses such an econometric issue is crucial. This study employs a two stage least squares estimation with instrumental variables that addresses the problem of endogeneity in the analysis and provides results that are more robust. In addition, for robustness purposes, this study also employs generalised least squares estimation that address the issues of heteroscedasticity and autocorrelation in the data analysis. The statistical models also test a lagged relationship between the diversity measures and financial performance, as the impact of diversity is not likely to be immediate, and Carter et al. (2010) observe that this is rare in prior research.

Lastly, this study seeks to contribute to knowledge by conducting an industry analysis in line with the notion that 'one size does not fit all' (Mikes & Kaplan, 2015). This is consistent with contingency theory that suggests a more complex association between board and firm performance in that certain diversity measures may be more

desirable in some firms and not in other under various circumstances (Fielder, 1967). In a similar vein, the Barclays (2010) annual report states that it is important for corporate governance frameworks to recognise that one size does not always fit all and to allow firms to operate in ways that suit the needs and challenges they face. Ooi, Hooy and Som (2015) state previous studies on board diversity have not taken into account industry-specific factors, which may influence firm outcomes. This study aims to contribute to this body of knowledge by examining the link between board diversity and financial performance within industries. The study's sample is broken down by industry according to standard industrial classification (SIC) codes, which classify companies in industry sectors according to the economic activities in which companies are engaged.

In addition to the overall contribution to the discussion of board diversity and firm performance, the findings of this thesis can offer insights to policy makers in formulating recommendations and codes of best practice that are related to desirable characteristics of boards. Board members, nomination committees and shareholders could also benefit from these findings in strategically creating boards that are well suited to perform their duties and, in advancing the diversity agenda.

1.6 Thesis Outline

This thesis is comprised of a total of seven chapters and this section outlines the structure and content of each of these chapters to offer a better understanding of their relevance within this study.

Chapter 1 has introduced the thesis and provided an overview of the development of corporate governance in the UK. In addition, the chapter discussed the rationale of this study drawing upon the need to examine the business case for diversity in the boardroom and presented the study's research objective and research questions. Lastly, the chapter provided insights of how the thesis aims to contribute to knowledge and practice.

Chapter 2 explores the academic literature in the field of corporate governance practices and board diversity. Specifically, it provides a detailed discussion of the history and development of corporate governance in the UK alongside the various definitions of corporate governance from both academic research and practice. This chapter also, focuses on addressing research question 1 through a review of the theoretical perspectives that are commonly used in prior literature when examining board composition and firm performance. In addition, the chapter discusses structural diversity, demographic diversity and firm performance and then provides an overview of prior empirical literature in the field of study. Finally, the chapter discusses the gaps identified in the literature that this thesis aims to address and it presents the basic conceptual framework that underpins this thesis.

Chapter 3 follows on from Chapter 2 and discusses the study's theoretical framework in more detail and in so doing, the chapter addresses research questions 1 2 and 3. The chapter begins by critically discussing upper echelons, resource dependence and agency theories and further provides a synthesis of these three theories in framing this study's theoretical framework. In addition, this chapter identifies and discusses the individual board characteristics that will be examined as measures of diversity and it develops the hypotheses that will be tested in order to address research questions 2 and 3.

Chapter 4 begins by confirming the ontological, epistemological and methodological choices upon which this thesis is based. It includes details on how the sample is screened and how the independent, dependent and control variables are measured in this study, including the construction of the board index created for this thesis. The chapter also presents and discusses the regression diagnostic tests in order to identify the most appropriate multivariate technique that addresses the relevant econometric issues in the data. Lastly, this chapter presents the empirical design of the regression models to be used in the analysis and the instrumental variables utilised in this research. This chapter is important because it addresses all three research questions and it explains how the research has been carried out, how the data has been collected and the choice of the methodological approach taken.

Chapter 5 presents and discusses the multivariate analysis related to research questions 1 and 2. The chapter begins by presenting the descriptive statistics for all the dependent, independent and control variables for this study. The chapter then presents and evaluates four regression models comprised of different variables in order to find the model that best explains any variation in the dependent variable and in so doing, these results examine the applicability of the study's theoretical framework using the data set. This chapter also presents the multivariate analysis that relates to research question 2 and the study's hypotheses. Each of the diversity measures are individually discussed alongside the results and the chapter discusses how the results of each of these measures contribute to the extant literature.

Chapter 6 is the second of the analysis chapters and it specifically addresses research question 3. The chapter begins by presenting a summary of the industry findings by displaying the association with financial performance found for each independent variable in each industry. The chapter then discusses each of the independent variables separately in relation to the industry findings and discusses the contribution to knowledge on that basis. In addition, the last sections of the chapter offer insights into some of the most interesting industry findings and why it is important to consider contextual factors when examining board diversity and firm performance. Further to this, the chapter discusses how this thesis has expanded knowledge in the field of board diversity within industry settings.

Chapter 7 is the final chapter and provides the conclusion to the thesis. The chapter begins by reviewing the study's research objective and the rationale for conducting this thesis. It then provides an overview of the key literature, key findings and contribution to knowledge of the each of the thesis' research questions. Lastly, the author discusses the limitations of the thesis and explores the directions for future research which arise from the study's findings.

1.7 Summary of Chapter

This chapter has introduced a brief background of the development of corporate governance in the UK and how the body of literature on board diversity emerged in response to numerous corporate scandals and the financial crisis. The chapter also presented the rationale for the study, which focuses on drawing upon a business case for diversity in the boardroom and this helped in formulating the research objective and research questions for this thesis. Lastly, the chapter has provided an outline of the structure of the thesis and an overview of the contents of each chapter in the thesis. The next chapter will discuss and review the applicable literature and theories that relate to corporate governance and board diversity.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction to Chapter

This chapter discusses and evaluates academic literature linked to the research questions and objective presented in Chapter 1. The chapter aims to discuss the development of corporate governance in the UK and, the duties and roles played by directors in the UK context. In addition, the chapter provides an overview of prior empirical findings and identifies a gap in the literature that this thesis will attempt to address. The chapter is organised as follows: Section 2.2 defines corporate governance from both academic research and firms perspectives. Section 2.3 discusses the development of the corporate governance system in the UK, whilst Section 2.4 discusses the roles and duties of boards of directors. Section 2.5 provides an overview of board heterogeneity versus homogeneity, whereas section 2.6 provides an overview of prior empirical studies on board diversity and firm performance and Section 2.7 discusses the gaps identified in the literature review. Lastly, Section 2.8 provides a summary of the chapter.

2.2 Corporate Governance Definitions

There is not one agreed definition of corporate governance amongst scholars. An early definition provided by Tricker (1984) states that if management is about the running of a firm, then corporate governance deals with making sure the firm is run properly. This approach is predominantly from an agency theory perspective which presumes the separation of ownership from control in firms results in a conflict of interests between the principals and agents (Jensen & Meckling, 1976). An alternative view of corporate governance emphasises a broader level of accountability to stakeholders through striking a balance between social, economic, communal and individual goals (Tricker, 2012). In line with this, a wider definition of corporate governance is provided by the OECD (1999, p.9) which states that corporate governance involves "*…a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined.".* Further to

this, Daily, Dalton and Cannella (2003) define corporate governance in the corporate sector as the evaluation of expenditure heads to which an organisation's resources are allocated and the resolution of conflicts amongst various members of the firm.

The history of corporate governance is said to date back to the 1970s after global markets became integrated (Malik & Makhdoom, 2016). However, the biggest catalyst of reform and development in corporate governance was in the 1990s and 2000s after numerous high profile scandals and failures of large firms such as Polly Peck and Coloroll (Cheffins, 2013). As a result, in the UK, the committee on the financial aspects of corporate governance set the first UK Corporate Governance Code in 1992 and this committee simply defined corporate governance as the system by which companies are directed and controlled (Cadbury Committee, 1992). This definition suggests that corporate governance is a collective system that creates a link between the board of directors (directing) and the shareholders who are the owners of the company (controlling) (Malik & Makhdoom, 2016). Some scholars suggest that a characteristic of good corporate governance practice is when a firm provides essential information to its shareholders and stakeholders in an attempt to minimise information asymmetry (Agyemang & Castellini, 2015). However, other scholars argue that good corporate governance practices enable firms to attract investment and brand themselves as a credible firm (Agyei-Mensah, 2016).

The definitions of corporate governance discussed above are based on the literature and academic research. However, some firms have begun to provide their own definitions and outline of what corporate governance and good governance is. For instance, in BP's annual report, they define it as follows "…*Governance is not an exercise in compliance nor is it a higher form of management. Governance lies at the heart of all the board does and it is the task our owners entrust to the board. It has a clear objective – ensuring the pursuit of the company's purpose…"* (BP, 2004, p.110). The annual report further notes that governance requires distinct policies and processes in which the board of directors has the responsibility to oversee and ensure good governance. In addition, Marks and Spencer's (2010) annual report, states that corporate governance encompasses the board of directors demonstrating

independence, bringing fresh perspectives, questioning management, making strategic decisions and ensuring accountability to shareholders and stakeholders. Notably, the definition provided by BP is more in line with the agency theory perspective, whereas the definition Marks and Spencer takes is more consistent with the stakeholder perspective. This is in line with prior studies that argue good corporate governance practice should be developed internally through voluntary practices that are contingent on the context of the firm as the 'one size fits all' framework may not ensure best practices for all firms (Black, De Carvalho & Gorga, 2012). Taken together, the definitions of corporate governance from both academic research and organisations emphasise an important duty of the board of directors in governing the firm and remaining accountable to shareholders and other stakeholders.

2.3 Development of the UK Corporate Governance System

The development of corporate governance in the UK commenced in the 1990s after public concern over unexpected financial scandals, corporate failures and rising levels of directors' pay (Dewing & Russell, 2004). These corporate scandals had a significant impact on investors' confidence in the accountability, disclosures and transparency of directors (Malik & Makhdoom, 2016). In response to this, various reports, codes and legislation were issued in an attempt to enhance good corporate governance practice and to encourage accountability and transparency in corporate firms. The first committee that was set up to address these concerns was the committee on the financial aspects of corporate governance in 1991 that published the Cadbury Report in 1992 (Dewing & Russell, 2004). Mallin (2011) points out that the Cadbury report is commonly recognised as having set the foundation for a best practice system in the UK and in other countries that later adopted this practice. The main recommendations of the Cadbury report were that firms should have at least three independent non-executive directors (NEDs) on their boards, the roles of Chairman and CEO should be separate and that firms should set up audit, remuneration and nomination sub-committees of the board (Cadbury Committee, 1992). Academic scholars state that a major limitation of this report was its sole focus on the financial aspects of corporate governance, which meant other important aspects such as executive remuneration, internal control and risk management were not fully addressed (Dewing & Russell, 2004; Ntim, Opong & Danbolt, 2012). Following on

from this initial report, there have been several reports that have elaborated on different aspects of the Cadbury report and some reports and codes have been in response to the 2007/8 global financial crisis (Mallin, 2011). Some of these reports and codes elaborate on different board practices and aspects of structural diversity that will be discussed in more detail in Chapters 3 and 4. The most notable and applicable ones to this study are discussed next.

Following public concerns over directors' remuneration and rising pay packages, the Greenbury committee was established to strengthen the accountability of the board and to enhance directors' performance (Jones & Pollitt, 2004). The main recommendations of the Greenbury Report were about the disclosure of directors' remuneration packages and the presence of independent directors on the remuneration committee (Greenbury Report, 1995). Although the Greenbury Report introduced some governance issues that had not been included in the Cadbury Report, some scholars criticised it for not restricting executive directors from excessive pay (Conyon & Sadler, 2010). In 1998, the first UK Combined Code was developed which drew together recommendations from the previous reports. The combined code operated on the comply or explain approach which requires companies to state in their annual reports whether they have adhered to the code's recommendations and explain the reasons for any non-compliance (Bozec & Bozec, 2012). This code further recommended that directors should carry out reviews on the effectiveness of the system of internal controls and risk management (Combined Code, 1998). In the early 2000s, further company failures and scandals occurred including the infamous Enron scandal and this again had an impact on investor confidence in the market and raised concerns over the effectiveness of corporate governance practices (Conyon & Sadler, 2010). In response, the Higgs review (2003) reviewed the role and effectiveness of NEDs and recommended the disclosure of the number of board meetings held, disclosure of board committee meetings, attendance records of individual directors and a separation of the role of CEO and Chairman in the company (Higgs, 2003). Based on the recommendations of the Smith and Higgs Reports, the Combined Code (1998) was revised and published as the Combined Code (2003). The requirements of this code are listed in Table 2.1.

Table 2.1 Requirements of the Combined Code (2003)

Summary of the Combined Code (2003) Requirements
➢ Splitting the roles of CEO and Chairman ➢ Appointment of Independent Chairs ➢ The majority of the board to comprise independent Non-Executive directors ➢ Audit committees to be established and act as links with external auditors ➢ Remuneration committee to be established and set executive directors' remuneration ➢ Nomination committee to be set up and to establish a formal and transparent nomination process for new directors ➢ Board committees to have independent non-executive directors on them ➢ The board should have a formal rigorous annual evaluation of its performance, the various board committees and of the individual directors

Source: Combined Code (2003)

Over the years, the corporate governance environment in the UK and globally developed further, and the Financial Reporting council has revised the Combined Code every two years, from 2006 to 2018, with all the codes based on the comply and explain principle. The most recent corporate governance code used for this study was the UK Corporate Governance Code 2014 (Financial Reporting Council, 2014). The main differences or revisions included in this code are: companies are now required in their annual reports to have a section that discloses the board's policy towards diversity and the implementation of the policy, listed companies are required to submit for an

external tender every 10 years at the least and, more dialogue is encouraged between shareholders and the board of directors (Financial Reporting Council, 2014). The UK corporate governance system is currently characterised by an outsider system of corporate governance based on the Anglo-Saxon model and includes a separation of ownership from control, hostile takeovers and strong investor protection (Garanina & Kaikova, 2016). Firms listed on the FTSE 350 are required to adhere to the Corporate Governance Code principles set by the Financial Reporting Council as part of the listing rules. Additionally, the Companies Act (2006) sets the fiduciary duties of directors and in particular, Section 172 of the act specifies that directors must act in the best interests of the company's stakeholders and not just solely on the shareholders' interests (Mallin, 2011).

2.4 Board of Directors: Duties and Roles

The board of directors is a collective group of individuals who are nominated by a firm's shareholders and are responsible for making decisions on their behalf (Van den Berghe & Levrau, 2004). This makes the board of directors a key mechanism in improving corporate governance within organisations. This is primarily because the board has the power to govern the organisation, to ensure good governance and alongside this, act on behalf of shareholders and other stakeholders (Azlan Annuar, 2014). Investors expect directors to have a certain standard of care and Tricker (2012) notes that the two main duties of directors are a duty of care and a duty of trust or fiduciary duty. The duty of care requires directors to exercise independent judgement with reasonable skills, diligence and care. The duty of trust requires directors to act in the best interests of the company, to avoid conflict between their duties and personal interests and, to behave with integrity and honesty (Tricker, 2012). Black, Cheffins, & Klausner (2006) articulate that these fiduciary duties require directors to act in good faith and to avoid all actions in which directors personally profit at the firm's expense.

In regards to the roles of directors, there are diverse perspectives in academic literature on the role of the board (Van den Berghe & Levrau, 2004). Generally, the board of directors has the responsibility of leading and directing the firm and

protecting the interests of shareholders (Nahar-Abdullah, 2004). In particular, the board of directors has several functions, which include evaluating the firm's strategies, monitoring and controlling managers, linking the firm to the external business environment and the appointment and remuneration of senior executives (Nahar-Abdullah, 2004; Campbell & Mínguez-Vera, 2008; Kuhç & Kuzey, 2016; Yasser, Entebang & Mansor, 2015). Prior empirical literature has examined the role of boards in two broad functions. The first one regards advising management and requires directors to have expertise and firm specific knowledge (Armstrong et al., 2016). The second is to monitor senior management, which requires a certain degree of independence from management (Armstrong et al., 2016). Research has shown that the presence of NEDs on boards provides an independent element that benefits the board in performing its role. In addition, corporate governance researchers show that NEDs play multiple roles on the board besides monitoring management (Hillman, Withers & Collins, 2009; Pye & Camm, 2003). Therefore, apart from being a monitoring mechanism, NEDs are important for improving the general leadership of an organisation through enhancing the quality of a company's strategy with different innovative ideas from an unbiased viewpoint. In line with this, Zattoni and Cuomo (2010, p.65) observe that the independence of NEDs on the board of directors, *"…implies the ability of non-executive directors to see things differently..."*.

Fama (1980) states that one of the most important roles played by the board of directors is that of oversight and control of management on behalf of shareholders. Boards are required to establish adequate procedures for preventing mismanagement and installing a system that discourages fraudulent scandals and corruption (Van den Berghe & Levrau, 2004). The UK approach to the monitoring role of boards is more centred on the NEDs having an ex-ante rather than an ex-post monitoring role[2]. Ex-ante monitoring refers to influencing and controlling projects, strategies and implementation plans that are consistent with the shareholders' objectives (Zalewska, 2014). However, in order for ex-ante monitoring to be effective Zalewska (2014) notes that there has to be a strong board with an adequate level of expertise. Further to this, Solomon (2010) states that for NEDs to effectively play a monitoring role, they need

[2] Ex-post monitoring refers to examining the quality of the results once the project is completed or under way and this role is undertaken by auditors (Zalewska, 2014).

to be independent. Other researchers have shown that the presence of NEDs on boards provides an independent element that benefits the board in performing all of its roles (Ben-Amar & Zeghal, 2011; Carter & Lorsch, 2013). Armstrong et al. (2016) argue firms that operate in more volatile business environments are more costly to monitor due to greater information asymmetries between managers and directors. Therefore, in order for directors to effectively monitor managers, better transparency is needed to reduce such information asymmetries (Clemente & Labat, 2009).

Another key responsibility and role of the board is to take strategic decisions that include, but are not limited to, mergers, acquisitions, executive appointments and the firm's financial structure (Adams, Hermalin & Weisbach, 2010). Directors should have insights on the firm's strategy and advise management in strategy formulation, identification and implementation (De Andres & Vallelado, 2008). Van den Berghe and Levrau (2004) further state that this implies directors should be able to see the present and keep an eye on the future (Van den Berghe & Levrau, 2004). The strategic role also requires, to some extent, entrepreneurial skills and the ability to take risks that are beneficial to the firm and in line with its strategy (Armstrong et al., 2016). Hillman and Dalziel (2003) state that directors also play a resource provision role to the firm through their external professional networks. For instance, directors with other external executive positions in financial firms can assist in securing favourable lines of credit and such resources enhance the functioning of the organisation (Daily et al., 2003).

Admiral's 2004 annual report summarises the role of the board as follows: "*…the prime job of the Chairman is to run the Board, not the organisation: that is the job of the Chief Executive. It is for the Board, led by the Chairman, to ensure that the Company has strategies, quality of management, and all the resources – financial, human, technology – to create wealth on a consistent basis. At the same time, the Chairman has to ensure that the business is run with value and integrity, not only meeting governance codes but also the expectations of customers, employees, suppliers and wider stakeholders…"* (Admiral, 2004, p.3). This report summarises and reinforces the strategic, resource provision and monitoring roles of the board of

directors. Thus, Admiral's annual report and the academic literature both highlight that directors have fiduciary duties of care and trust and they play multiple roles on boards which include monitoring, advisory, resource provision and strategic roles (Black et al., 2006; Campbell & Mínguez-Vera, 2008). However, Abidin, Kamal and Jusoff (2009) note that the blame for the majority of past corporate failures and scandals has been placed on the board of directors. The reasons stated in the literature for these failures include poor monitoring by the board, management pursuing their own interests and a lack of accountability by the board to stakeholders (Kuhç & Kuzey, 2016). Therefore, it is important to ensure that boards of directors perform their roles and duties effectively as their ability to do so can either enhance or destroy firm value (Nahar-Abdullah, 2004).

2.5 Heterogeneity versus Homogeneity on Boards

Social scientists have attempted to explore the different effects of the characteristics and heterogeneity of group members in the decision-making process and, historically, this research has predominantly focused on top team management rather than boards of directors (Dallas, 2001). Governments, shareholders and various stakeholder groups advocate for greater heterogeneity amongst directors on corporate boards. Scholars who support greater board heterogeneity argue that firms can benefit from directors who bring diverse social and occupational perspectives to the board (Anderson et al., 2011). It is important to note that the terms board diversity and board heterogeneity are used interchangeably in the literature (Adams et al., 2015).[3] The extant literature has debated the different potential effects of board diversity/heterogeneity and these arguments are discussed further in the next sections.

2.5.1 Board Heterogeneity

Kreitz (2008) broadly defines diversity or heterogeneity as any significant differences that differentiate individuals from each other. Proponents of board heterogeneity argue that directors with different opinions and backgrounds are able to make better quality decisions due to an ability to stimulate the group and consider

[3] Although this section refers to board heterogeneity, the rest of the thesis uses the term board diversity.

alternative perspectives (Perryman, Fernando & Tripathy, 2016). A diverse board therefore reduces the probability of complacency and narrow mindedness when evaluating decisions and formulating firm strategies by producing a wider array of solutions and criteria for evaluating strategies (Dallas, 2001). In line with this, scholars suggest that an effective board of directors is comprised of individuals who provide a wide range of skills, experience and diversity to the firm, as their competing views and perspectives can result in more innovative ideas and in more creative problem solving (Adams et al., 2015). In addition, Petrovic (2008) notes that this broader base of information, knowledge and skills from diverse boards alleviates the problems encountered with 'groupthink' and allows for more innovative ideas and contributions, which in turn should improve firm performance. Other scholars have examined the idea of board heterogeneity from an agency theory perspective and concluded that board diversity increases the independence of the board; therefore, diverse boards will be more effective in monitoring and controlling management (Marinova et al., 2016). From a resource dependence theory viewpoint, board diversity may generate a better public image of the firm and gain access to a wider range of resources through the different external ties and social ties of diverse directors (Smith et al., 2006). A study by Anderson et al. (2011) found empirical evidence to support the notion that shareholders view board heterogeneity as a means of protecting and benefiting their interests and that board heterogeneity in complex firms significantly improves firm performance.

A different stream of literature contends that greater diversity can involve greater costs as the coordination of a diverse group of individuals can be more difficult due to conflicts of opinions arising (Smith et al., 2006). A diverse board of directors may slow down the decision-making process and constrain strategic changes as the different and varied perspectives may make it more difficult for the board to reach a consensus (Marinova et al., 2016). This in turn leads to a less effective decision-making board and obstructs the competitiveness of a firm, especially in uncertain and rapidly changing business environments, such as the tourism and information technology industries, where quicker decision-making is vital (Carter et al., 2003). Other opponents of board diversity argue that ethnic minority and female directors, for instance, may be appointed as a sign of tokenism, therefore their contributions to

the board may be marginalised (Gul, Srinidhi & Ng, 2011; Hillman, Shropshire & Canella, 2007). Therefore, greater board diversity may increase the potential for conflicts and divisions to arise on the board, which can affect the board's cohesiveness and decrease firm performance (Francoeur et al., 2008; Ntim, 2015).

2.5.2 Board Homogeneity

The main arguments for homogenous or non-diverse boards are centred on the disadvantages of highly diverse boards of directors. Social psychology has drawn on the notion of 'faultlines' to explain potential negative effects of diversity (Lau & Murnighan, 1998). Adams et al. (2015) define faultlines as any assumed dividing lines that separate a group into homogenous subgroups based on members' alignment with attributes such as gender, age or race. Faultlines may increase the potential for conflicts amongst the board and reduce board effectiveness, therefore homogenous boards would be more advantageous in promoting cohesiveness (Li & Hambrick, 2005). This line of thinking is consistent with the social identity theory that proposes the group to which an individual belongs boosts their self-esteem and their identity, to the extent that individuals within a similar group (i.e. gender, social class, age group) will gravitate towards each other and discriminate against other members who are not part of them (Brown, 2000). Demographic diversity attributes are likely to be associated with this in group/out group categorising that hinder group cohesiveness and can obstruct the dynamics of the board in the decision-making process (Li & Hambrick, 2005). Similarly, Forbes and Milliken (1999) note that heterogeneous boards are associated with cognitive conflict and can result in board members avoiding each other. This is consistent with Westphal and Bednar's (2005) study that conducted a survey on the NEDs of US companies and found that NEDs with diverse functional backgrounds, educational backgrounds and gender had lower cohesion and failed to effectively communicate to each other their concerns on the firm's strategy. This resulted in the board failing to implement strategic change in response to low firm performance (Westphal & Bednar, 2005). These arguments taken together suggest that a homogenous board would be more beneficial in initiating strategic change and implementing quicker decision-making on the board.

Petrovic (2008) points out that highly homogenous boards of directors are subject to 'groupthink' where cohesive groups subconsciously repress any points of view or any information that is not consistent with the preferred views. This results in poor quality decisions and poorer effectiveness of the group. Consistent with this, Rizzi (2008) states that the 'groupthink' effect contributed to the poorer risk management decisions of firms that led to the 2007/8 global financial crisis. Petrovic suggests that in order to avoid the groupthink effect, moderate amounts of cognitive conflict can improve board effectiveness through a more critical consideration of important strategic issues. In addition, Veltrop et al. (2015) argue that not all demographic faultlines within a board will impact the way the board functions. Overall, the extant literature suggests that higher board heterogeneity can negatively impact the cohesiveness of the board and positively impact the cognitive conflict on the board. However, highly homogenous boards are positively associated with board cohesiveness but can negatively affect cognitive conflict, therefore a balance is needed (Adams et al., 2015; Petrovic, 2008; Westphal & Bendnar, 2005). Dallas (2001) states that the advantages of group diversity generally outweigh the advantages of homogeneity and group cohesion when the function of that group is to monitor some of its own members, such as in the case of the board directors. This is particularly important for effective boards from an agency theory perspective and in light of previous corporate scandals and financial crises. In addition, Perryman et al. (2016) argue that overall, heterogeneity and diversity in problem solving and in decision-making produces better quality decisions through a broader range of perspectives and a more critical analysis of the decisions and related issues. This falls in line with the propositions of upper echelons theory that suggests individuals at the top of the organisation, who are responsible for the firm's strategy, are influenced by their different characteristics and this influences the functioning of the organisation (Hambrick & Mason, 1984).

2.5.3 Structural versus Demographic Diversity

A review on board diversity research by Adams et al. (2015) notes that board diversity has commonly distinguished in the literature between task-related diversity, non-task related diversity and structural diversity. Similarly, Carter at el. (2010) state that the business case for board diversity mainly relates to the service, strategy and

control functions of the board. Task related diversity includes attributes such as educational and functional background, non-task related diversity includes gender, race, age and nationality, whilst structural diversity includes board independence and CEO duality (Adams et al., 2015).

Ben-Amar et al. (2013) note that structural diversity refers to the best practices set out by governance codes and guidelines and they are mainly based on the assumption of a separation of ownership from control in firms. Therefore, measures of structural diversity commonly focus on attributes that enhance the monitoring and control function of the board of directors and this in turn can improve the quality of decision-making and lead to improved firm performance (Fama & Jensen, 1983). Consequently, structural diversity is commonly measured in the literature by the percentage of independent NEDs on the board and the separation of the chairman and CEO roles (Ararat at al., 2015). These measures are designed to nurture a greater diversity of interests and incentives on the board than if executive directors only were controlling the board (Ben-Amar at al., 2013). From the fiduciary perspective, structural diversity can improve board effectiveness and create value through reducing the agency costs of the firm (Rashid, 2015). Prior studies on the performance outcomes of structural diversity are mixed with the majority of the studies concluding that the performance effect of structural diversity is task-specific and contingent upon the context (Ararat et al., 2015; Johnson, Schnatterly, & Hill, 2013). In order to examine structural diversity in this study, an index is constructed based on the recommendations of the UK Corporate Governance Code 2014 and this is discussed in more detail in Chapters 3 and 4.

In regards to demographic diversity, Hambrick and Mason (1984) propose that demographic diversity enhances the ability to deal with strategic change, and such diversity improves the knowledge base, creativity and quality of decision making of a group (Erhadt, Werbel & Shrader, 2003). This is based on the idea that an individual's demographic attributes such as ethnicity, education, functional background, gender and age, will influence their cognition, behaviours, and decision making and consequently impact firm-level outcomes (Petrovic, 2008). This is in line with the

work of Becker (1964) on the human capital theory that examines the role of an individual's collective stock of education, experience and skills in enhancing their cognitive capabilities that are beneficial to a firm. In addition, other scholars link human capital with resource dependence theory and suggest that human capital is a vital resource for firms as it brings diversity of perspectives to the boardroom (Terjesen et al., 2009). The majority of board research considers demographic variables separately and the majority of these studies have predominantly focused on either gender or ethnicity (Ararat et al., 2015; Ben-Amar et al., 2013). In addition, Carter et al. (2010) state that contingency theory is relevant in demographic diversity studies, as the effects can be different based on internal and external circumstances making diversity contingent upon the context. This is in line with Johnson et al.'s (2013) review of board composition that concludes increased board diversity could be utilised as a method to balance trade-offs between gathering various perspectives and creating cohesion, and it may provide access to a wider range of resources. Therefore, depending on the context, diversity may either result in positive firm outcomes, constrain outcomes, or it can balance them (Johnson et al., 2013; Sundaramurthy & Lewis, 2003). The theoretical framework developed in this study and discussed in Chapter 3 allows both structural and demographic issues of diversity to be explored simultaneously.

2.6 Previous Empirical Findings

The empirical evidence on board diversity and firm performance has produced mixed results and Low et al., (2015) note that this research has largely focused on US firms in comparison with other countries. Ntim (2015) states that the mixed evidence on the link between board diversity and firm performance is consistent with the conflicting nature of the conceptual literature on board diversity. Several studies report that board diversity is associated with higher market valuation and improves financial performance (Dezsö & Ross, 2012; Erhardt et al. 2003; Terjesen, Couto, & Francisco, 2016). For instance, Wellalage and Locke (2013) examined board diversity on a sample of 198 listed firms in Sri Lanka over the period 2006-2010, and found a positive association between the ethnicity and age diversity of directors and financial performance proxied by Tobin's Q. Similarly, Erhardt et al. (2003) investigated the impact of ethnic and gender diversity on boards and observe similar results based on

a sample of 127 large US companies. In addition, Campbell and Mínguez-Vera (2008) examine the board gender diversity of listed firms in Spain and found a positive effect on firm value using panel data analysis. Whereas, a study by Adams and Ferreira (2009) on US firms found that boards with greater gender diversity made more effort to monitor managers. However, their study also found a negative relationship between the percentage of women on the board and Tobin's Q (Adams & Ferreira, 2009). Mahadeo et al. (2012) find that age diversity and gender diversity on boards has a positive impact on the firm performance of companies listed on the stock exchange of Mauritius. The majority of these studies have focused on examining the links between gender diversity and firm performance, with less attention being paid to other diversity attributes (Post & Byron, 2015).

Other studies that have examined the links between board diversity and firm performance have reported negative associations (Hillman et al. 2007; Smith et al., 2006; Ujunwa, 2012). An earlier study by Goodstein, Gautam and Boeker (1994) on 334 US hospitals researched the impact of board diversity on strategic change in the period 1980-1985, and found that firms with homogenous boards were more likely to initiate strategic change than heterogeneous boards. Adams and Ferreira (2009) found a negative relationship between board gender diversity and firm performance on US firms and concluded that the presence of women on boards may lead to unnecessary over-monitoring in firms with strong governance. Likewise, Ujunwa (2012) examined the board composition of 122 listed firms in Nigeria and found a negative association between CEO duality, board size, gender diversity and financial performance. A different stream of literature has provided empirical evidence of no association between board diversity and firm performance (Chapple & Humphrey, 2014; Rose, 2007; Smith et al., 2006). For instance, Farrell and Hersch (2005) examined the addition of women on corporate boards of US firms and, using Poisson regressions, they found no evidence that the addition of female directors has an impact on ROA and market returns. Similarly, Carter et al. (2010) found no significant association between gender and ethnic diversity of boards and the financial performance of firms listed on the S&P 500. They further argue that their findings are due to the contingency effect of board diversity on performance (Carter et al., 2010). Wang and Clift (2009) also report that gender and ethnic diversity on the boards of Australian firms had no

significant impact on ROA and ROE and, they conclude that there is no business case for gender and ethnic diversity in the Australian context.

The empirical findings on board diversity and firm performance above have provided evidence of both beneficial and harmful effects of diversity on performance. Adams et al. (2015) and Kagzi and Guha (2018) have conducted recent reviews of the research on board diversity in the last decade and suggested different reasons for the mixed findings in the extant literature. One of the most common reasons for mixed findings in prior board diversity research is that researchers have utilised different theories to support their findings and each theory examines a different dimension of board diversity (Ali et al., 2014). For instance, studies using agency theory perspective may only examine the monitoring function of directors, whereas studies using the resource dependence theory perspective may only examine the resource provision role (Kagzi & Guha, 2018). Another reason for some of the mixed findings in the literature is that scholars have used different types of data, with the majority of studies on board diversity using cross-sectional data (Dezsö & Ross, 2012). However, Adams et al. (2010) state that the majority of the studies that use cross-sectional data suffer from econometric problems such as endogeneity and reverse causality which need to be adequately addressed with such data sets. Post and Byron (2015) conducted a meta-analysis of women on boards and firm performance and they suggest that the inconsistent findings on this relationship were due to different contextual factors. Other scholars suggest that the disparity in prior findings could also be due to differences in measurements of diversity variables (Ararat et al., 2015; Kagzi & Guha, 2018). Lastly, the empirical findings may also be mixed due to scholars using different measures of performance. For instance, Haslam et al. (2010) report that board diversity has a positive impact on accounting based measures of performance and a negative impact on market based measures of performance.

2.7 Gaps in Literature

The literature reviewed in this chapter has identified that directors of a company are a key internal mechanism of corporate governance as they play multiple roles on the board. In particular, the literature review has highlighted four main gaps in the

literature that need to be addressed when examining the link between board diversity and firm performance. First, the majority of studies that have examined board composition and board diversity have predominantly used an agency theory perspective. A central element of agency theory is the board of directors' role of providing oversight and monitoring management due to the separation of ownership from control (Jensen & Meckling, 1976). However, Daily et al. (2003) state that although agency theory is useful in conceptualising the monitoring and control role of directors, it does not consider directors' other roles such as the resource provision, service, advisory and strategic roles. Similarly, Hillman et al. (2009) suggest that resource dependence theory is not adequate on its own in exploring board composition or diversity and firm performance as its sole focus is on the resource provision role. In addition, Kagzi and Guha (2018) note that each theoretical perspective examines a different dimension of board diversity. Therefore, a multi-theory perspective that takes into account the different dimensions of diversity, including both structural and demographic diversity, is required when examining the business case for diversity. In addition, the multi-theory framework must also address the different functions and roles played by the board as individual theories focus on a single function or role of directors.

Second, the literature reviewed highlighted that academic research has largely focused on the independence of NEDs in board effectiveness and performance. However, there has been scarce literature on the capability of NEDs in performing their duties and in improving board effectiveness. In addition, prior studies have commonly looked at board independence and CEO duality when examining structural diversity (Ararat et al., 2015; Ujunwa, 2012). However, Ben-Amar et al. (2013) noted that structural diversity refers to the recommendations and guidelines set out in governance codes and codes of best practice. Therefore, rather than focusing solely on board independence and CEO duality, studies that examine structural diversity need to include other aspects of best practices of the board such as director attendance, shareholder relations, disclosures and board committees. Third, Anderson et al. (2011) note that board demographic diversity can arise from differences in attributes such as educational background, experience, profession, gender, age and ethnicity. However, Post and Byron (2015) state that beyond gender diversity, there is a limited amount of

academic research and evidence to support the notion that board diversity influences firm performance. Therefore, academic research on board diversity needs to adopt a much wider focus on other aspects of diversity, besides just gender diversity, in building a business case for diversity in the boardroom. Lastly, one of the reasons that prior studies on board diversity have produced mixed results is that contextual factors were not taken into consideration and Johnson et al. (2013) call for future research on board diversity to investigate contextual factors in helping to reconcile the conflicting findings. This thesis will attempt to address the gaps identified in the literature by adopting a conceptual framework that takes into account the different roles played by directors and that addresses different aspects of diversity. This framework is discussed in more detail in Chapter 3.

2.8 Summary of Chapter

This chapter has defined corporate governance and discussed the history of the development of the corporate governance system in the UK, which was largely developed in response to numerous corporate failures and scandals. The literature review identified the multiple roles and duties of the board of directors as a key internal mechanism of corporate governance in firms. These roles include, monitoring and control, advisory, strategic and resource provision roles. The review also noted that prior empirical studies that have examined board diversity and financial performance have only focused on certain aspects of structural diversity, such as board independence and CEO duality. Other studies have predominantly focused only on certain aspects of demographic diversity such as gender diversity and ethnic diversity. The next chapter will discuss the conceptual framework that this thesis will adopt in more detail and present the diversity variables that will be examined in this study. In so doing, the next chapter also develops the hypotheses that will be tested in this study.

CHAPTER 3 THEORETICAL FRAMEWORK

3.1 Introduction to Chapter

The purpose of this chapter is to discuss academic literature and theories that are linked to the research objective and research questions of this study. First, this chapter will provide an overview of the theoretical approach that will be adopted in this thesis in order to address the gaps identified in the literature. Second, this chapter will critically discuss and present upper echelons, resource dependence and agency theories, which will inform the basis of this research. Third, an integration of the three theories will be discussed and the board characteristics that will be used as independent variables in this research will be presented and discussed. Lastly, this chapter discusses the importance of conducting an industry analysis in this research.

The chapter is structured as follows: Section 3.2 discusses and presents the theoretical approach adopted in this thesis including a discussion of upper echelons, resource dependence and agency theories. This section also provides a synthesis of the three theories, which leads on to Section 3.3 that discusses the board index to be constructed in this study and the individual board characteristics that proxy board diversity. Section 3.4 discusses the reasoning behind conducting an industry analysis of the findings, whilst section 3.5 discusses the contribution to theory. Lastly, Section 3.6 provides a summary of the chapter.

3.2 Theoretical Approach Adopted in this Thesis

The board of directors has four main important functions, which are to monitor and control management, to provide advice and counsel, strategy formulation and implementation and linking the firm to its external environment (Mallin, 2011). The structure and composition of a board can impact the way it performs each of these functions and the decision making process, and this in turn can determine firm performance (Carter et al., 2010). An earlier study by Forbes and Milliken (1999) suggested that board effectiveness can be measured through the extent to which boards succeed in effectively performing their roles and through the cohesiveness of the board. A large body of the theory in corporate governance literature addresses some

of these functions in one way or another, however Zattoni, Douglas, and Judge (2013) point out that there is no agreement on the theoretical perspective that best addresses board effectiveness in corporate governance research. In addition, they state that individual theories are limited in their ability to fully predict and offer insights, on the relationship between board diversity and financial performance (Zattoni et al., 2013). This is also consistent with Carter et al.'s (2010) study that states no single theory can predict the nature of the link between board diversity and financial performance encompassing the multiple functions that boards play. Rather, an adoption of an interdisciplinary approach from multiple theories can provide more insights into the relationship between board diversity and financial performance (Carter et al., 2010; Chen at al., 2016). Therefore, this thesis adopts a multi-theory approach in an attempt to overcome the current myopic single based theory perspective in corporate governance research and provide a more complete understanding of the relationship between board diversity and financial performance.

Some corporate governance theories used in previous studies such as stakeholder theory and institutional theory, do not adequately predict a clear link between board diversity and financial performance. For instance, in line with the normative side of stakeholder theory, Yang and Konrad (2011) point out that institutional theory emphasises the normative context in which organisations exist, therefore the argument for board diversity from this perspective might be best centred on social responsibility and adhering to the social environment rather than on a business case for diversity. Prior literature has identified that resource dependence theory offers some of the most fruitful and theoretical arguments in exploring the business case for diversity in regards to the resource provision role (Hillman et al., 2009). Whereas, agency theory establishes that the directors must enforce adequate monitoring and control mechanisms in order to protect shareholder interests as part of their monitoring and control roles. In addition, previous studies have noted some important implications of agency theory propositions on the effectiveness of boards in the decision-making process (Petrovic, 2008; Terjesen et al., 2009). However both of these theories do not adequately specify the diversity attributes of individual directors that can make them more effective in performing their roles and in improving the decision making process. Neither do these theories fully consider the strategic role

played by directors on the board. Therefore, in addition to agency theory and resource dependence theory perspectives, this study also integrates upper echelons theory from management literature that clearly specifies the diversity attributes and characteristics of top management that can predict organisational performance and that address the strategic role (Hambrick & Mason, 1984). The three theories are used to complement each other in order to enhance their predictive power on the association between board diversity and firm performance. These three theories are individually discussed in the following sections.

3.2.1 Upper Echelons Theory

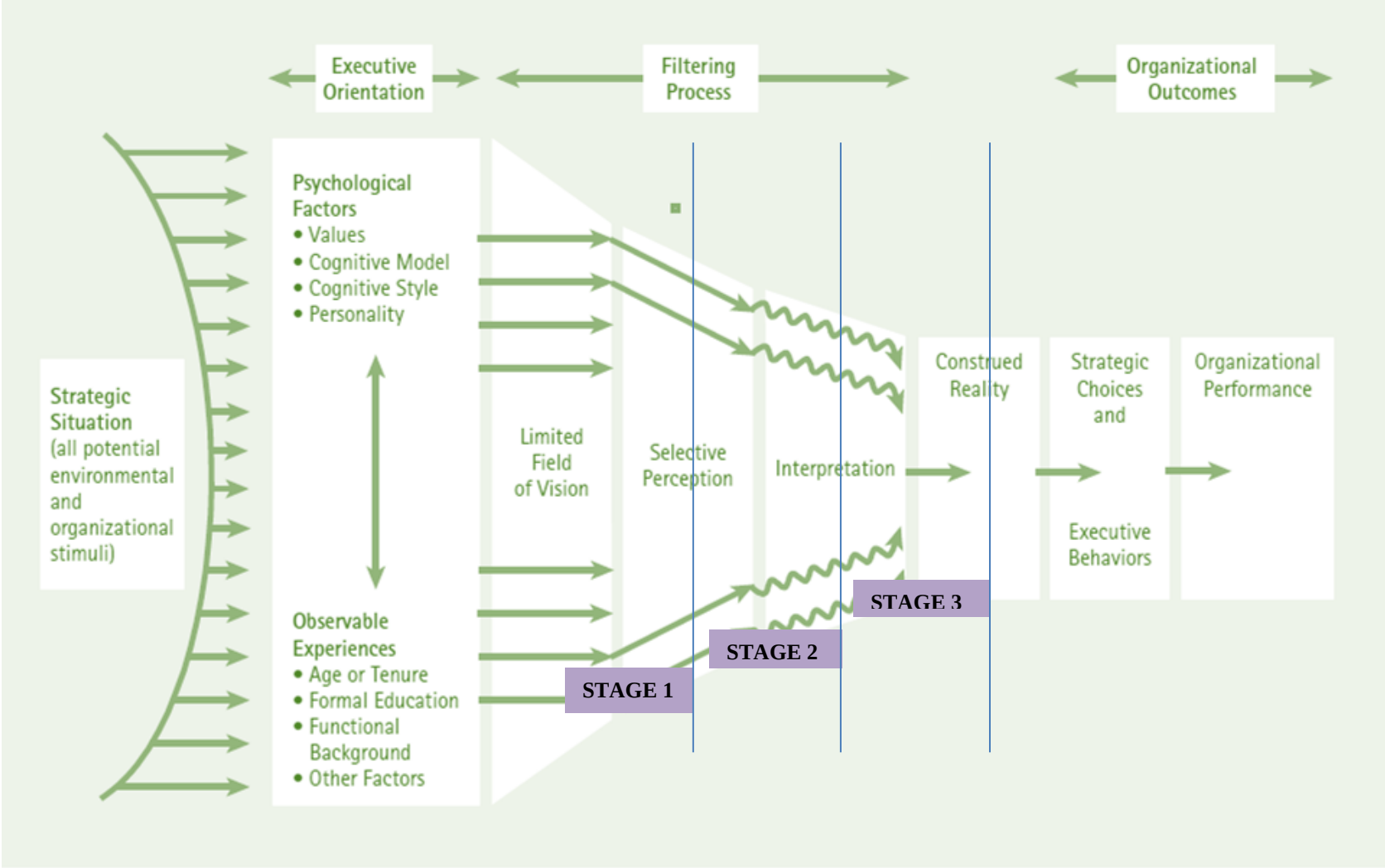
"*If we want to understand why organisations do the things they do, or why they perform the way they do, we need to understand the people at the top*" (Hambrick, 2005, p.111).

The founding paper of upper echelons theory by Hambrick and Mason (1984), proposed that senior executives act and make decisions on the basis of their individual interpretations and options. The central idea of upper echelons theory is that because executives view the world through lenses of their personal values, experiences, personalities and backgrounds, these characteristics can be used to predict executives' strategic choices and organisational outcomes (Karake, 1995). Upper echelons literature examines the top management team of organisations as being the people at the top. Wong, Ormiston and Tetlock (2011) describe a firm's top management team as the CEO, top managers and senior executives of a firm who are involved in making strategic decisions. This study will refer to the top management team as senior executives of a firm. The history of upper echelons dates back to the 1970s as a direct criticism of population ecologists who argued that large organisations are swept along by events in the external environment and somehow run themselves (Hall, 1977). In parallel to this, population ecologists argued that because environments are so large and exert a lot of pressure on organisations the impact of top executives becomes insignificant in running a firm (Hannan & Freeman, 1977). Upper echelons scholars opposed this idea by taking the view that top executives greatly matter in the running of an organisation and acknowledged that managerial characteristics and backgrounds greatly influence organisational outcomes (Hiebl, 2013). Therefore, the study of senior executives is of utmost importance because they are a highly visible embodiment of

an organisation including its strategic direction, credibility and values (Cannella & Pettigrew, 2001).

Upper echelons theory was built on the premise of bounded rationality; an idea developed by Cyert and March (1963) who suggested that complex and uncertain information or situations are not objectively knowable but rather merely interpretable. Cyert and March (1963) further stated that complex decisions are largely an outcome of behavioural factors as opposed to an automated pursuit for economic optimisation. Therefore, upper echelons theory is ultimately an information processing theory that offers a systematic way of explaining the behaviour of executives under conditions of bounded rationality (Hiebl, 2013). Upper echelons theorists suggest that the combination of particular situational conditions and upper echelons characteristics will lead to certain strategic choices that ultimately define organisational performance (Nielsen, 2010). According to Hambrick and Mason (1984) the choices of senior executives are influenced by their cognitive base as well as their values and, since such psychological constructs are not easily observable, they suggested that the demographic characteristics of senior executives are suitable and reliable proxies for their cognitive base and values. A decision maker's cognitive base and values thus generate a screen between a situation and the decision maker's perception of it and this perceptual process is illustrated in Figure 3.1. Upper echelons theory argues that executives arrive at a strategic decision in the following three-stage process, illustrated in Figure 3.1 (Cannella & Pettigrew, 2001). The first stage of this process is the executives' field of vision. This relates to the directions in which executives look and listen resulting in them scanning only limited portions of the external environment. According to Hambrick and Mason (1984) executives cannot scan every detail of an organisation and its environment, a fact that restricts their field of vision and limits their subsequent perceptions. The second stage refers to what the executives' actually see and hear which results in them selectively observing only some of the phenomena in their field of vision. The third stage is the extent to which executives attach meaning to what they see and hear. This leads to the interpretation of stimuli through a filter of individualistic values and beliefs (Zhihua, 2010).

Figure 3.1 Strategic Choice under Bounded Rationality: The Executive's Construed Reality



Source: Hambrick (2005, p.113)

Hiebl (2013) stated that the backgrounds and strategic choice of upper echelons may be influenced by the situations organisations face, such as the external environment or firm specific characteristics. These are, then, antecedents to organisational outcomes and managerial characteristics. After the initial development of the upper echelons framework, Hambrick (2005) later suggested two moderators of the relationship between managerial characteristics and organisational outcomes, which are behavioural integration and managerial discretion. According to Cannella and Pettigrew (2001) behavioural integration is the extent to which executives engage in collective interaction by sharing information, resources and decisions. Hambrick (2007) argued that if executives do not collectively process information and make decisions, then their collective characteristics would be of no use in predicting organisational strategy and performance. Managerial discretion is based on the idea that the importance of senior executives is dependent on the level of discretion or freedom of action they possess in making strategic choices (Hiebl, 2013). The implications of managerial discretion in the upper echelons framework are that upper echelons provide great predictions of organisational outcomes in direct proportion to the level of managerial discretion. If a high level of discretion is present, then executives' characteristics will become reflected in strategy and performance, if discretion is lacking then executives' characteristics do not matter (Hambrick, 2007).

The values and cognitive bases of executives are said to be a function of their observable individualities such as education, experience, age, gender and nationality. This provides a basis for studying team dynamics by demographic proxy (Carpenter, Geletkanycz & Sanders, 2004). One of the differences between the upper echelons framework and other organisational frameworks is that upper echelons theory spans individual, team and firm levels. Importantly, the theory provides explanations on the influences of individual characteristics on team decision-making processes and firm outcomes. Organisational studies informed by other theoretical frameworks rarely examine cross-level interactions across all three levels (Nielsen, 2010). Since the development of the upper echelons framework, significant evidence has been accumulated to indicate that executives act, in part, on the basis of their individual characteristics and in turn companies become a reflection of their senior executives (Hambrick, 2005). Geletkanycz and Hambrick (1997) found strong evidence that

executives' external networks influence company strategy. This suggests that external ties of executives may explain the extent to which the company in question would pursue strategies outside the industry's central tendencies. Furthermore, Zhihua (2010) found positive associations between executives' education levels and corporate social performance, whilst Naranjo-Gil and Hartmann (2007) found that executives' experience was significantly associated with management control systems and better use of financial information. As a result, upper echelons theorists argue that heterogeneity in an executive team is positively correlated with performance by virtue of the fact that homogeneity can lead to inferior decision making because of 'groupthink' (Hiebl, 2013).

Cannella and Pettigrew (2001) noted that the upper echelons framework places emphasis on the entire top management team as opposed to the CEO alone. In addition, Carpenter and Fredrickson (2001) argued that the characteristics of all the senior executives are better predictors of organisational outcomes than those of the CEO alone. Scholars who invoke the upper echelons perspective typically argue that senior executives should be of interest because individuals at higher levels in the organisation are expected to exert greater influence on strategic decisions (Carpenter et al., 2004). Given the great complexity and difficulty in obtaining conventional psychometric data on executives, Jensen and Zajac (2004) state that researchers can reliably use demographic data of executives, such as functional backgrounds, education and experiences, to predict strategic actions and firm performance. Undoubtedly the upper echelons body of literature is a flourishing one. However, while empirical evidence exists to suggest that executives matter to firms, the results of empirical research are not wholly consistent.

Nielsen and Nielsen (2013) found that executives' nationality and functional background had positive effects on performance whilst age, education and experience had no effect on performance. Some critics of upper echelons theory claim it places too much emphasis on the importance of the top management team, thus glorifying executives. These critics further state that there are many other employees in organisations who affect performance and deserve scholarly attention (Cannella &

Pettigrew, 2001). However, Hambrick (2005, p.123) directly answered these critics by pointing out that the upper echelons model is entirely based on the flaws and human limits of executives and "*…pokes holes in the mythology of all-knowing economic optimizer at the top of the firm. This is the antithesis of glorification...*". Nielsen (2010) took a closer look at upper echelons theory and noted that heterogeneity was defined as a general construct and no distinction was made between various elements of diversity such as age, gender and function. However, it is important to consider that these different elements of diversity will not have uniform effects when empirically applied as different types of heterogeneity in top management team composition will have different drivers.

Research on top management team heterogeneity has produced inconsistent findings which may be due to this research neglecting the influence of power status within a team (Jackson, Joshi & Erhardt, 2003). Peterson et al. (2003) found that a CEO's personality can impact the dynamics of a top management team and such differences in power and status produce dynamics that affect upper echelons relationships. In addition, Carpenter et al. (2004) observed that another major limitation of the upper echelons framework is its focus on only the top management team, whereas there are other groups, such as the board of directors, who should be pivotal to the upper echelons model. A major criticism of the upper echelons model is described by Cannella and Pettigrew (2001) as the '*congruence assumption*'; as empirical research models based on demography include processes as concepts, with the expectation of providing an explanation of the relationships between demographics and organisational outcomes.

These process constructs are not being examined nor directly measured and researchers need to investigate the black box of demography which Lawrence (1997) refers to as the real psychological and social processes that drive executives' behaviour. Cannella and Pettigrew (2001) stated that it is important to consider that demographics are greatly limited, imprecise and noisy proxies for executives' cognitive bases. However, in the earliest development of the upper echelons model, Hambrick and Mason (1984) argued that demographic characteristics are more

essential than psychological dimensions from an upper echelons perspective, because the cognitive bases and values of executives are not convenient to measure nor are they responsive to direct measurement. Further to this, the use of background characteristics has found favour for a long time in numerous research fields, such as in marketing research where demographics are frequently used as indicators of consumer preferences (Hambrick & Mason, 1984). The upper echelons perspective is entirely based on the premise that executives are humanly finite and susceptible to the same human foibles as any other person. The role of an executive is highly demanding, which is why the upper echelons model is not out to demean executives but rather to develop insights that will improve their effectiveness (Hambrick, 2007).

3.2.1 Resource Dependence Theory

Previous research that has looked at the links between the board of directors and performance has followed numerous paths and some of the most popular paths have been that of agency theorists and resource dependence theorists. Resource dependence theory views the board of directors as a provider of valuable resources that improve firm performance (Hillman & Dalziel, 2003). This is precisely the area where resource dependence theory makes the greatest impact on contemporary research. Daily et al., (2003, p.275) allude to this in the following quote: "…*rather than focusing predominantly on directors' willingness or ability to control executives, in future research scholars may yield more productive results by focusing on the assistance directors provide in bringing valued resources to the firm and in serving as a source of advice and counsel to CEOs*…". Furthermore, Boyd's (1990) earlier work on the resource dependence theory suggests that it is not just the number, but also the type of directors on the board that matter. Resource dependence theory draws upon the discipline of sociology and proposes that the very survival of a firm is dependent on its ability to obtain control over environmental resources and external pressures, such as regulation, and competition will cause firms to pursue environmental linkages (Boyd, 1990). Research conducted by Davis and Cobb (2010) after the 2007/8 financial crisis, found evidence to suggest that interest in resource dependence theory is on the rise after an era of dormancy. This is because the current state of global activities, namely economic crises, dissatisfaction with political leadership and increased social activism, is significantly similar to the era in which Jeff Pffefer

conceptualised the theory and these affairs make matters of power and dependency more important.

The founding work on resource dependence theory, by Pfeffer and Salancik (1978), proposed five options for firms to use in reducing environmental dependencies and these are mergers, joint ventures, political action, executive succession and boards of directors. The board of directors is viewed as an integral part of firm success by resource dependence scholars as the board is used as a key link in gaining scarce resources and valuable information needed by the firm (Nicholson & Kiel, 2007). Although there is not one agreed definition of what these resources are, Hillman and Dalziel (2003) define them as anything that can be considered as a strength or weakness of a firm, and their list of resources that could be provided by directors includes expertise, legitimacy or boosting a firm's public image, advice, counsel, links to stakeholders including finance providers and strategy formulation. In addition, other scholars suggest that qualified directors from diverse backgrounds and constituencies can provide better links and networks with stakeholders, such as customers and the society, which can enhance the firm's reputation, opportunities and values (Mahadeo et al., 2012; Ntim, 2015; Wellalage & Locke, 2013). Hillman et al. (2000) state that the most visible differences amongst directors are in their occupational attributes such as expertise, potential linkages, information and skills. In previous literature the primary antecedent of a board's provision of resources was board capital and although different terms have been used to describe board capital, resource dependence theorists have commonly referred to it as directors' expertise, knowledge, skills, reputation and experience (Hitt et al., 2001). Scholars suggest that a board's provision of resources is directly linked to firm performance as these resources reduce transaction costs, reduce environmental uncertainty, reduce dependency between the firm and external contingencies and in the long run aid in the survival of the firm (Hillman, Cannella & Paetzold, 2000). Earlier work by Pfeffer and Salancik (1978) reported that firm performance is dependent upon the development of linkages to the external environment such as boards of directors, which implies that board composition ought to be affected by environmental pressures and demands, and differences in board composition should affect performance.

Hillman et al., (2009) assert that in order for a firm to facilitate strategic change and gain competitive advantage, the board's composition must be strategically altered because as a firm's external environment changes, so does the need for linkages within that environment. The extent to which directors benefit a firm is however dependent on whether their presence provides access to valuable resources, reduces environmental dependency or helps in establishing legitimacy as not every director has the ability to do so (Daily & Schwenk, 1996). It is therefore important to observe the unique attributes each director brings to a firm as doing so will help in determining the kind of resources any given director is likely to bring. The board of directors may also be an advantageous resource in reducing transaction costs through external linkages. Gales and Kesner (1994) provided an example of this as follows: if a director has regulatory knowledge, their knowledge can help in reducing transaction costs with a regulatory agency. Several other studies in organisational psychology contend that individual differences in knowledge and skills have a direct impact on job performance and individual training success (Crocker & Eckardt, 2014). Intangible resources embedded in directors, such as knowledge, skills and experience, are more likely to produce competitive advantage due to them being unique and harder to imitate. Therefore resource dependence theory researchers argue that the heterogeneous distribution of resources in firms, such as human capital, is advantageous and explains differences in performance, as firms with valuable resources that are harder to imitate will outperform competitors lacking those resources (Crook et al., 2011). A study by Provan (1980) argued that in order for companies to acquire these critical resources they would need to attract powerful members of the community onto their boards. Hillman (2005) found that companies operating in heavily regulated industries tended to have more former politicians on their boards than other industries, as they offered important political resources that were beneficial to firms in highly regulated industries. This is in turn had a positive correlation with higher levels of financial performance.

Hillman et al. (2009) found that from a resource dependence view, directors are beneficial to companies for legitimacy, giving advice and counsel, providing

information and providing preferential access to resources. The legitimacy theory assumes that companies behave according to society's demands hence when a company discloses information it reduces public pressure by making itself look legitimate to the public (Cong & Freedman, 2011). Further to this, financial crises and scandals can lead to a breach of trust and companies will need to work hard to boost public confidence and reduce information asymmetries. Better transparency can reduce information asymmetries between the firm and users of its financial information, thus making a firm more attractive to the market as investors can better judge the risk levels (Clemente & Labat, 2009). A study by Arthaud-Day et al. (2006) proposed that during legitimacy crises, director turnover can be a crucial step toward restoring legitimacy and mending broken links with the environment; and when clients know the credentials of new directors they can predict the quality of services they will receive which eventually reduces an imbalance of information asymmetries. Agency theory assumes that inside directors are more inclined to side with managers' interests hence need to be monitored, however resource dependence theory views inside directors as an important resource as they provide firm specific information to the board which helps with decision making (Hillman et al., 2000).

Another limitation of resource dependence theory is that although human capital and resourceful directors have numerous positive benefits to firms, they represent a cost to firms as directors with more skills and expertise would require a larger remuneration (Hillman et al., 2009). However, Carter et al. (2010) and Hillman et al. (2009) note that prior studies on the board of directors more often support the propositions of resource dependence theory over other perspectives including agency theory. Therefore, resource dependence theory provides a good basis for some of the most influential theoretical arguments that advocate a business case for board diversity. Conversely, resource dependence theory focuses more on the resource provision role of directors whereas Chapter 2 highlighted that directors play multiple roles on boards not just the resource provision role (Armstrong et al., 2016). Considering this, in a review of resource dependence theory by Hillman et al. (2009), it was suggested that resource dependence theory is not sufficient on its own and should be integrated with other theories in order to offer new insights on the phenomenon of interest.

3.2.2 Agency Theory

The other and most dominant path that previous researchers have followed when examining the link between the board of directors and performance is that of agency theorists. They argue that a key role of directors is to monitor management on behalf of shareholders, as effective monitoring can reduce agency costs and improve performance (Hillman & Dalziel, 2003). Agency theory is arguably the foundation of many corporate governance frameworks, practices and regulatory initiatives. A major concern in corporate governance and transparency development is about corporate control. In the modern world the *"...separation between ownership and control of corporations characterises the existence of a firm..."* (Bonazzi & Islam, 2007, p.7). This theory assumes that a company's actions are compelled by individuals' pursuit of self-interest, with contracts overseeing relationships between management, shareholders and employees (Mihret, 2014). Agency theory identifies a principal-agent relationship in firms, where directors work as agents on behalf of shareholders. This separation of ownership from control not only brings about a conflict of interest, but also results in information asymmetry, as shareholders are not involved in the daily running of the firm (Tricker, 2012). Therefore, agency theory offers shareholders the pre-eminent position in organisations, not just as the owners, but also as the residual risk takers (Clarke, 2004).

The agency problem was initially explored by Ross (1973) and the first detailed theoretical explanation was provided by Jensen and Meckling (1976, p.308) who described the agency relationship as "…*a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent. If both parties to the relationship are utility maximisers there is good reason to believe that the agent will not always act in the best interests of the principal...*". This definition expresses a clear division of responsibility between the principals and agents thus making delegation explicit (Saam, 2007). Clarke (2004) states that the essence of the agency problem is the separation of management and finance, where agents

accumulate significant residual control rights and discretion over the allocation of investors' funds. Moreover, agency theory proposes that conflicts of interest between the principal and agent arise because of three main issues: information asymmetries, risk preferences and goal conflicts (Saam, 2007). Informational asymmetries arise in the agency relation because the principal cannot effectively monitor the agent's competences, skill set, intentions, actions and internal firm knowledge (Gerhart & Rynes, 2003).

Johnson and Droege (2004) stated that principals and agents are assumed to have different attitudes towards risks. The key factor here is the link between compensation schemes and performance. Agents may be more risk averse as they may entirely rely on their earnings for income, whereas principals are assumed to be risk neutral as they can diversify risk by investing in multiple companies (Gerhart & Rynes, 2003). Conflicts of interest may also arise in the agency relation because both the principals and agents have different goals. Both want to maximise their individual utility, agents want to maximise their income whilst principals want to maximise their returns (Saam, 2007). The combination of information asymmetry, different risk preferences and goal incongruence can lead to opportunistic behaviour, adverse selection and moral hazard (Gerhart & Rynes, 2003). Adverse selection refers to opportunistic behaviours that may occur before setting a contract, where for example a candidate applying for an executive job overstates their accomplishments on their CV. In contrast to adverse selection, moral hazard occurs after a contract is already in place. Moral hazard refers to the behaviours that directors may take once employed which may not be in the best interest of shareholders, such as using creative accounting (Gerhart & Rynes, 2003). Therefore from an agency theory perspective, the key role of directors is to ratify the decisions of managers and to reduce and minimise the problems associated with the separation of ownership from control by ensuring managers' actions are aligned with serving the interests of shareholders (Hillman et al., 2000).

Many corporate scandals such as the Enron scandal were a result of directors abusing their power through creative accounting to hide debt and credit operations, which meant investors did not know the risk imposed when investing in these firms

(Vinten, 2002). More recently, Paul Moore who was formerly the head of regulatory risk at HBOS before its collapse was quoted in an interview saying, *"…I strongly believe the real underlying cause of the problems was simply this - a total failure of all key aspects of governance… there has been a completely inadequate separation and balance of powers between the executive and all those accounting for their actions…"* (Buckley, 2011, p.209). Agency theory suggests that the solution to overcoming conflicts of interests between directors and shareholders is to design incentives such as bonuses and stock options that align the interests of both directors and shareholders (Shapiro, 2005). According to Johnson and Droege (2004) the goals of principals and agents can be aligned through incentive based contracts which tie rewards to achievement. Incentive-based compensation schemes encourage agents to pursue goals that are directly linked to the principal's goals and tangible rewards (Johnson & Droege, 2004).

Furthermore, Hillman and Dalziel (2003) state that when incentives are aligned with shareholders' interests, directors will become effective monitors of management which will in turn improve performance. Agency theory suggests that when agents have an information advantage over principals about the outcome of their actions, it is efficient to have a written contract with payoffs that are based on outcomes that can be observed by the principals (Mallin, Melis & Gaia, 2015). In addition, Hillman and Dalziel (2003) also suggest that equity compensation motivates directors to be better monitors as when boards do not directly share in company equity they have no appreciation of it and may have no motivation to pursue shareholders' interests. On the other hand, agency theorists propose that the directors themselves must also be monitored in order to minimise abuse of power and Bonazzi and Islam (2007) state that this can be done through the use of external auditing on financial reports and through employing independent outside directors in order to improve transparency. In this separation of ownership from control, agency theorists assume that inside directors are more inclined to side with managers' interests whilst independent outside directors are better suited to represent and protect shareholders' interests (Hillman et al., 2000). Therefore, agency theory researchers such as Band (1992) state that independent directors are a key mechanism in monitoring the self-seeking actions of managers and protecting shareholders' interests. However, Fama and Jensen (1983)

suggest that besides their monitoring role, outside independent directors can also be classified as trade experts who provide valuable expertise and connections to the firm. Scholars have argued that independent directors are able to act in a preventative capacity through monitoring the actions of executive directors, protecting investor confidence and reducing agency costs, which in turn improves corporate performance (Zattoni & Cuomo, 2010). Independent directors are meant to monitor executive directors but at the same time they rely on the information provided by these executive directors. Hooghiemstra and Van Manen (2004) describe this as the independence paradox, which also raises questions about the importance of director independence.

Corporate governance researchers have criticised agency theory through the lenses of other theories such as stakeholder and stewardship theories. The major limitation of agency theory is that it is based on the assumptions that *"…people are self-interested not altruistic…"* and the only objective of a firm is to maximise shareholders' wealth, whereas stakeholder theory argues that the purpose of a firm is to create value for all its stakeholders (Tricker, 2009, p.222). However, stakeholder theory itself has been criticised for lacking adequate empirical grounding and for needing major reformulation to improve its explanatory and predictive efficacy (Mihret, 2014). Agency theory proposes that conflicts of interest and agency costs can be minimised through monitoring directors and management. However, stewardship theory dismisses the assumption of goal conflicts by presuming an alignment between the interests of managers and shareholders implying there would be no need to monitor them (Fox & Hamilton, 1994). In addition, stewardship theory proposes that pro-organisational and socialist behaviours have higher utility than individualistic self-seeking behaviours, such that stewards will act in the organisation's best interest (Johnson & Droege, 2004).

Another limitation of agency theory is that it does not recognise that directors may require different skills and capabilities in order exercise their duties effectively (Petrovic, 2008). Agency theory recommends aligning the board's incentives with those of shareholders creates better monitoring, however this focus on incentives overlooks the board's ability to monitor and agency theorists have not openly

considered that boards may vary in their ability to monitor (Carpenter & Westphal, 2001). In addition, other scholars argue that agency theory does not fully acknowledge the fact that directors are a social group that is part of a highly dynamic system, therefore the effectiveness of boards could more likely depend on cognitive ability and group cohesiveness and participation (Nicholson & Kiel, 2004; Petrovic, 2008). Wiseman, Cuevas-Rodríguez and Gomez-Mejia (2012) argue that although agency problems are universal, their manifestation and the solutions in which they should be dealt with may vary depending on the institutional context because delegation is involved. Agency theory offers a major theoretical contribution to organisational literature by regarding information as a commodity that has a cost and can be purchased (Clarke, 2004). This implies that organisations can invest in formation systems, such as boards of directors and auditors, to control agent opportunism. Clarke (2004) further recommends that although agency theory presents a valid view of organisations, additional theoretical perspectives can help capture the greater complexity of organisations. In line with Ararat et al., (2015), this study departs from previous studies by focusing on the board's role of monitoring as a channel through which board diversity can improve financial performance. This line of thinking is based on the argument that diversity on the board can lead to improved monitoring through preventing groupthink in decision making and prompting critical enquiry (Carter et al., 2003; Ararat et al., 2015). The next section will discuss how upper echelons, resource dependence and agency theories will be integrated in order to form the theoretical framework of this study. Table 3.1 shows how the research questions presented in Chapter 1 are addressed by the theoretical framework discussed.

Table 3.1 Summary of Research Questions and Theories

Research Questions	Theory
Which theoretical framework is the best modelling tool of board diversity and financial performance?	**Upper Echelons Theory** Proposes that top executives' demographic characteristics are great predictors of performance.
Is there a relationship between board diversity and financial performance?	**Resource Dependence Theory** Maintains the view that the board of directors is a key link between a company and the resources it needs to increase performance.
Does the relationship between board diversity and financial performance differ amongst industries?	**Agency Theory** Asserts that a key role of directors is to monitor management on behalf of shareholders, as effective monitoring can reduce agency costs and improve performance.

3.2.3 Integration of Upper Echelons, Resource Dependence and Agency Theories

A single theoretical framework, agency theory, dominates the majority of literature in corporate governance studies (Huse et al., 2011; Jermias & Gani, 2014). Zattoni and Van Ees (2012, p.113) note that one of the main criticisms of this approach is that it simplifies assumptions and provides an '*…under socialized view of human beings and reduces the complexity of corporate governance phenomena…*'. In addition, Jermias and Gani (2014) suggest empirical studies using agency theory have produced inconclusive results because they have only focused on the monitoring function of boards and ignored other functions such as the resources directors provide to firms. Therefore, the results from Zattoni and Van Ees's (2012) study, and other researchers, propose that a promising avenue for future governance research is to utilise other theoretical paradigms or to combine two or more theoretical frameworks to bridge this gap in the literature (Daily et al., 2003; Huse et al., 2011).

Agency theory asserts that inside directors are more likely to side with management's interests therefore outside independent directors may better protect shareholders' interests (Hillman et al., 2000). However, agency theory has overlooked the board's ability to monitor management and protect shareholders' interests and agency theorists have not explicitly considered the heterogeneity of this monitoring ability (Hillman & Dalziel, 2003). Hillman et al. (2009) suggest that a fruitful area for theoretical refinement is research that disentangles the types of human capital needed on the board to provide the benefits advocated by the resource dependence theory. In addition, Hambrick and Mason (1984) noted the need to draw upon relevant literature from other disciplines when they conceptualised the upper echelons framework. Nielsen (2010) further states that upper echelons perspectives must be combined with alternative theories in order to fully answer the fundamental question of whether heterogeneity in top management teams impacts firm strategy and performance. Therefore, this section will focus on the limitations brought forward by upper echelons literature and address these through resource dependence and agency theories in order to offer a new theoretical lens on board composition.

Upper echelons theory proposes that in order to understand why organisations perform the way they do, researchers must consider the biases and dispositions of their top executives, whom Hambrick (2007) described as an organisation's most powerful actors. Although the definition of the top management team differs among studies, the upper echelons stream generally refers to senior executives of companies and assumes these to be the individuals with the ultimate decision making power in firm strategies. This assumption omits a broader set of position holders, the board of directors, who are arguably the most powerful actors in the firm (Nielsen, 2010). Bhagat and Bolton (2008) state that the board of directors is a key corporate governance mechanism that is ultimately responsible for the success and performance of a firm. Scholars who invoke the upper echelons perspective typically argue that senior executives should be of interest because individuals at higher levels in the organisations are expected to exert greater influence on strategic decisions (Carpenter et al., 2004). If this is the case, then it can be assumed that the board of directors, who are at a higher level than senior executives, should exert even greater influence on strategic choices and organisational outcomes. This view is in line with resource dependence theory that regards the board of directors as a key link in gaining scarce resources and valuable information needed by firms, thus making directors an integral part of firm success (Nicholson & Kiel, 2007).

Although there is not one agreed definition of what these resources are, Hillman and Dalziel's (2003) list includes expertise, legitimacy or boosting a firm's public image, advice, counsel, links to stakeholders and strategy formulation. Research shows that board members exert a direct influence on organisational strategy through the provision of different resources (Carpenter et al., 2004). At the same time, board members exert an indirect effect on organisational strategy which is not limited to counsel and advice but also through the selection and dismissal of CEOs (Westphal & Fredrickson, 2001). In addition, agency theorists propose that NEDs, apart from being a monitoring mechanism, are also important for improving the general leadership of an organisation through improving the quality of a company's strategy with different innovative ideas from an unbiased standpoint (Brennan & McDermott, 2004). Zattoni and Cuomo (2010, p.65) observed that independence, *"…implies the ability of non-executive directors to see things differently..."*. Therefore this study integrates upper

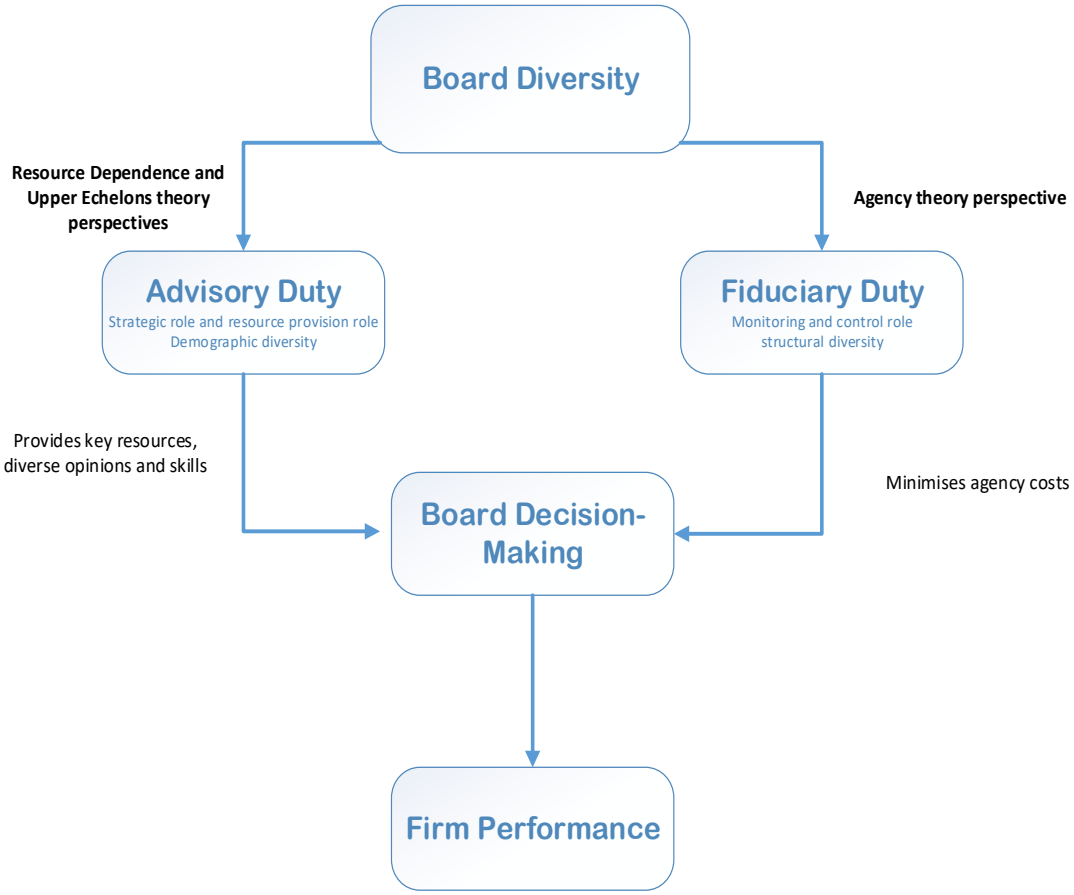
echelons, resource dependence and agency theories by proposing that an organisation's strategic choices and performance can be explained, in part at least, by the profile of its board of directors.

After the initial development of the upper echelons framework, Hambrick (2005) later suggested a moderator of the relationship between managerial characteristics and organisational outcomes, namely, managerial discretion. Managerial discretion is based on the idea that the importance of senior executives is dependent on the level of discretion or latitude of action they possess in making strategic choices (Hiebl, 2013). The implications of managerial discretion in the upper echelons framework are that upper echelons provide great predictions of organisational outcomes in direct proportion to the level of managerial discretion. Further, Peterson et al. (2003) found that the CEO's personality can impact the dynamics of a top management team and such differences in power and status produce dynamics that affect upper echelons relationships. This implies that the upper echelons of senior executives, or directors, will be poor predictors of performance because the CEO will have the greatest power and influence on the decision making process (Hambrick, 2007). On the other hand, agency theory addresses managerial discretion by highlighting the importance of board independence and CEO duality, stating that the role of the CEO and chairman should remain separate so that no one individual should have 'unfettered powers of decision' (Financial Reporting Council, 2014). Therefore, by combining upper echelons and agency theories, upper echelons characteristics will provide great predictions of organisational outcomes when there is no CEO duality and that at least half of the board of directors consists of independent non-executive directors. This eliminates issues of power and status, and proposes that the board's effectiveness and performance can be determined by the collective and individual behaviours of all the directors (Reyner, 2010).

Boards have a fiduciary duty to provide oversight and monitor management's behaviour in order to protect shareholders' interests, however Haynes, Campbell and Hitt (2014) state that not every board is well suited to perform this duty. Therefore, from an upper echelons and resource dependence perspective, it is important to

observe the unique attributes each director brings to a firm as doing so will help in determining the kind of resources any given director is likely to bring. Hillman et al. (2000) suggest that the resource dependence and agency roles of directors must be examined together in order to avoid incomplete pictures of board composition and performance. Earlier work on upper echelons theory identified the top management team to include both senior managers and senior executives, some of which served on the board of directors but excluded all other directors including non-executive directors (Carpenter et al., 2004). On the other hand, agency theorists propose conflicts of interests and information asymmetry can be overcome through external auditing and employing independent directors (Brennan & McDermott, 2004). Further to this, the development of corporate governance has seen the formalisation of board committees in governance codes, recommending that an effective board should have at least three principal committees, namely the audit, nomination and remuneration committees (Tricker, 2012). All of these committees are established for different purposes and are predominantly composed of independent directors. In order to provide a more holistic picture of both demographic and structural diversity in the boardroom, this study integrates upper echelons, resource dependence and agency theories, by not only focusing on directors' demographics, but also board independence, board size and board committees. The integration of these three theories addresses the gaps identified in the literature in Chapter 2 and the basic framework that underlines the thesis is displayed in Figure 3.2 below.

Figure 3.2 Thesis Conceptual Framework



The framework presented in Figure 3.2 highlights the multiple roles of the board of directors in decision-making, which in turn is expected to impact firm performance. From a fiduciary perspective, the board influences firm performance by focusing on their monitoring roles, which minimise agency costs (Ben-Amar at al., 2013). This monitoring role is improved by structural diversity, which includes good governance practices that are recommended by codes of best practice and in the UK context, from the UK Corporate Governance Codes. The advisory governance duty alludes to the strategic and resource provision roles played by directors on the board and this contributes to enhanced strategic decision-making. This is achieved through more questioning, offering different perspectives, advising and formulating strategies in the decision making process (Ben-Amar et al., 2013). The directors also provide access to beneficial resources and act as a 'lynch pin' between firms and their external

environments (Hillman et al., 2009). These roles are enhanced through characteristics and attributes derived from demographic diversity. Taken together, board diversity, including structural and demographic diversity, is expected to enhance the board's decision-making process and improve firm performance.

3.3 Board Diversity Variables and Hypotheses Development

Boards of directors have traditionally been seen as a homogenous network of elites with similar educational and professional training and consequently similar views on business practices and decision-making (Useem, 1984). Further to this, Norburn (1989) found that the majority of large UK firms were homogenously composed of white, middle class, middle-aged men with similar professional and educational backgrounds. In line with this, Brammer, Millington and Pavelin (2007) found that directors in UK firms had a high degree of demographic homogeneity. In a later study, Useem (1993) noted that institutional investors in the 1990s and shareholder activists began to increase pressure on companies to appoint directors with different backgrounds under the assumption that greater board diversity improves decision-making. More recently, the UK Corporate Governance Code 2014 promotes board diversity by stating that an effective board should have the right balance of experience, skills and knowledge (Financial Reporting Council, 2014). Post, Rahman and Rubow (2011) suggest that board diversity provides access to various knowledge, expertise and network domains through directors of different ages, gender and backgrounds. The board of directors as a group combines a variety of competencies and capabilities that collectively represent a pool of social or human capital for a company (Carpenter & Westphal, 2001). In line with this study's conceptual framework, a self-constructed board index is created in order to capture structural diversity in line with the recommendations of the UK Corporate Governance Code 2014.

With regards to demographic diversity, Hillman et al. (2000) state that the most visible differences amongst directors are in their occupational attributes such as age, gender, expertise, potential linkages, information and skills. On this basis, the

independent variables that will be used to proxy demographic diversity in this study are as follows:

- Age
- Gender
- Education
- Experience
- Multiple directorships

The next sections will discuss academic literature on gender, age, education, experience and multiple directorships of directors together with the board index. In exploring the relevant literature on these variables, the research hypotheses will be identified and developed.

3.3.1 Board Index

The relationship between corporate governance and firm performance has been commonly measured using different variables to explain the corporate governance arrangements of an organisation (Malik & Makhdoom, 2016). The most popular variables that have been used in previous research include board independence, CEO duality, board size, board committees and director's compensation (Bhagat & Bolton, 2013; Gompers, Ishii & Metrick, 2003; Karamanou & Vafeas, 2005). The majority of these studies have been firmly grounded in the agency framework of Fama and Jensen (1983). Further to this, the majority of these studies focus on what Ararat et al. (2015) term as structural diversity, and they document positive associations between board independence, disclosure and firm value (Ararat et al., 2015; Hermalin & Weisbach, 1998). The board index developed in this study encompasses such structural diversity and its construction is discussed in more detail in Chapter 4. However, the elements included in the index are consistent with prior literature and they are derived from the recommendations of the UK Corporate Governance Code 2014. The main attributes included in the index are discussed in more detail in this section.

CEO Duality

Duality refers to the position where the roles of Chairman and CEO are occupied by the same individual and this has been a subject of interest in corporate governance research over the last two decades. From an agency theory perspective, boards should be independent from management to prevent managerial entrenchment and because CEO duality conflicts with this proposition, agency theorists argue that CEO duality has a negative impact on firm performance (Krause, Semadeni & Cannella, 2014). In line with this, numerous studies have identified that CEO duality reduces a board's independence and makes the board less effective in monitoring management and transparency (Ben-Amar & Zeghal, 2011). Other scholars suggest that a separation of the role of CEO from that of Chairman of the board reduces agency costs of the firm (Mishra & Mohanty, 2014). However, other prior studies have found a positive relationship between duality and financial performance (Gill & Mathur, 2011; Peng, Zhang and Li, 2007). These studies are consistent with the propositions of stewardship theory that argues duality can empower management to make independent executive decisions that are beneficial to the firm (Pillai & Al-Malkawi, 2018). However, the board index is constructed in line with the study's theoretical framework and the recommendations from the UK Corporate Governance Code 2014, that states the role of the CEO and Chairman should remain separate so that no one individual should have 'unfettered powers of decision' (Financial Reporting Council, 2014). Therefore, firms with CEO duality are expected to have a negative influence on financial performance and are not awarded any marks for this is the board index.

Board Independence and Non-Executive Directors

Research has shown that the presence of non-executive directors (NEDs) on boards provides an independent element that benefits the board in performing its role. From an agency theoretical perspective, boards with more independent NEDs are presumed to be more effective in monitoring and controlling management and consequently are expected to be more successful in directing management towards activities that enhance firm value and increase transparency (Jizi et al., 2014). Agency theorists assume that in the separation of ownership from control, inside directors are more inclined to side with managers' interests whilst independent NEDs are better suited to represent and protect shareholders' interests (Hillman et al., 2000). In

addition, corporate governance researchers show that NEDs play multiple roles on the board besides monitoring management (Hillman et al., 2009; Pye & Camm, 2003). Therefore, apart from being a monitoring mechanism, NEDs are important for improving the general leadership of an organisation through improving the quality of a company's strategy with different innovative ideas from an unbiased standpoint. Zattoni and Cuomo (2010, p.65) observe that the independence of NEDs in organisations *"...implies the ability of non-executive directors to see things differently..."*. The Organisation for Economic Co-operation and Development (OECD) principles established that independent directors are needed to provide an unbiased view on issues such as remuneration, and apply independent judgement as this improves the integrity of financial information and the risk management of firms (Mallin, 2013). As a result of this, many governance codes, including the UK Corporate Governance Code, recommend a company's board of directors to have a significant proportion of non-executive independent directors.

The majority of empirical studies on board composition have concluded that greater board independence is related to improved transparency and effective monitoring (Donnelly & Mulcahy, 2008; Ferreira, Ferreira, & Raposo, 2011; Lim, Matolcsy, & Chow, 2007). Likewise, Ben-Amar and Zeghal (2011) proposed that boards with a large proportion of independent NEDs are more responsive to the information disclosure needs of investors, which therefore reduces agency costs, increases the quality of a company's disclosure and boosts investor confidence. Other researchers have found that the presence of NEDS significantly impacts transparency and improves a company's performance including stock returns and credit ratings (Clemente & Labat, 2009; Guo & Kga, 2012). Other researchers such as Brennan and McDermott (2004) found a negative correlation between the number of NEDs on a board and the financial performance of a company. Haniffa and Hudaib (2006) concluded that this negative correlation could be accredited to NEDs lacking real independence or business knowledge to be truly effective. A different line of enquiry suggests that some independent NEDs lack time, relevant experience, skills and knowledge to perform their duties effectively. These are all measures that will be examined in this study in the other variables discussed previously. However, the board index incorporates measures of board independence in line with previous research that

states structural diversity is best measured by board independence and CEO duality (Ararat et al., 2015).

Board Size

Agency and resource dependence theories provide support for an appropriate board size in order to control for agency costs and to provide valuable resources to firm through key links and connections (Jackling & Johl, 2009). However previous literature has produced mixed findings on the benefits of larger boards in comparison to smaller boards. For instance, Azeez (2015) notes that smaller boards can improve firm performance, because larger boards create greater agency costs and may delay the decision-making process. Similarly, Hermalin and Weisbach (1998) noted that larger boards may suffer from a dispersion of responsibility and an unpleasant attitude towards monitoring management. This is consistent with an earlier study by Yermack (1996) who found an inverse relationship between board size and firm value in US firms. However, Pillai and Al-Malkawi (2018) suggest that larger boards have the advantage of sharing management and expertise and the ability to oppose any irrational decisions by the CEO. In line with this, Kiel and Nicholson (2003) find a positive relationship between board size and firm performance. In addition, Mishra and Mohanty (2014) note that small boards may find difficulties in staffing various board committees and large boards have the benefit of having board members with more diverse backgrounds, skills and knowledge. Numerous studies have identified that a good board size must have a minimum of six directors and a maximum of 15 directors (Ben-Amar & Zeghal, 2011; Darmadi, 2013). This is consistent with the recommendations of the UK Corporate Governance Code that states a board should be of a sufficient size to meet the firm's business requirements but should not be inconveniently large (Financial Reporting Council, 2014). This is incorporated in the construction of the board index in line with the code's recommendations and prior studies.

Board Committees

The development of corporate governance has seen the formalisation of board committees in most governance codes, including the UK Corporate Governance Code,

recommending that an effective board should have at least three principal committees namely the audit, nomination and remuneration committees (Tricker, 2012). In addition, many governance codes state that for board committees to be effective they must be composed of a majority of independent non-executive directors, who must meet frequently to exercise effective control of their duties and responsibilities (Ben-Amar & Zeghal, 2011).The board of directors has a fiduciary duty and responsibility to act on behalf of the shareholders, and in practice many of these responsibilities are delegated to the board committees (Guo & Masulis, 2015). Therefore from an agency theory perspective, board committees with independent directors are able to enhance the monitoring role of the board, whilst from a resource dependence theory perspective, board committees can provide important resources to the firm (Appiah & Chizema, 2016). Generally the audit committee focuses on managing internal financial performance and the appointment of independent auditors. The remuneration committee is responsible for dealing with incentive plans for managers, compensation and benefits of executives, whilst the nomination committee is in charge of the nomination and selection process of directors. Therefore, through the board committees, the board can directly influence the quality of financial reporting and disclosures, CEO pay and the nomination of new directors (Green & Homroy, 2018).

Eulaiwi et al. (2016) note that it is important to investigate the structure and formation of board committees in corporate governance research due to the central role they play in setting objectives, monitoring and advising firms. In line with this, Francis et al. (2015) note that the compensation of CEOs, which has been greatly debated in the literature, is directly under the scope of influence of the board of directors. Empirical evidence also suggests that composition and role of board committees is important for the governance of a firm. For instance, Shivdasani and Yermack (1999) found that the presence of a CEO on the nomination committee resulted in the appointment of fewer independent directors. Further to this, they also found that shareholders of a firm viewed the presence of a nomination committee as an important signal of the board's ability to maintain independence. A study by Anderson, Mansi and Reeb (2004) found that independent audit committees had lower debt financing costs. Further to this, Krishnan (2005) found that firms with independent members and more financial experts on their audit committees had

significantly fewer internal control problems. Dell'Atti, Intonti and Iannuzzi (2013) argued that there is a positive relationship between financial performance and a high quality remuneration committee because when the committee is efficient agency costs are reduced and it improves incentive alignment. In regards to board diversity, Kaczmarek, Kimino and Pye (2012) note that nomination committees play a key role as they have the ability to ensure suitable candidates with diverse knowledge, backgrounds and skills are appointed to the board. The effectiveness of these board committees is dependent on their size, independence, frequency of meetings and expertise of members, as stated by Ben-Amar and Zeghal (2011). These elements are also incorporated in the board index that is constructed for this study.

Directors' Meetings and Attendance

Literature that has investigated the board meeting activities of directors has largely found that the number of meetings that firms hold are significantly associated with firm performance and the corporate governance practices of the firm (Brick & Chidambaran, 2010; Gray & Nowland, 2017; Sharma, Naiker & Lee, 2009). These studies are consistent with the notion that increased meeting frequency and attendance enhances the monitoring and advisory roles of the board of directors. Gray and Nowland (2017) note that prior literature on director attendance has revealed that attendance at board meetings is systematically related to director characteristics and firm characteristics. Brown and Caylor's (2006) study displayed that director attendance was the seventh (out of 51 measures) most significant corporate governance measure that was positively related to firm performance in US firms. In addition, Min and Verhoeven (2013) found that NEDs' attendance was positively related to the firm performance of companies in South Korea and Taiwan. In regards to board committees, Hoque, Islam and Azam (2013) found that more frequent remuneration and audit committee meetings had a positive association with ROA. However, other scholars such as Vafeas (1999) found a negative relationship between the frequency of board meetings and firm value. Generally, the majority of scholars suggest that the frequency of attendance in board meetings by directors is a good signal of their commitment and active role in monitoring management (Mishra & Mohanty, 2014). Therefore, the attendance of directors and meeting frequency is included in the board index constructed. The construction of this study's board index is discussed in

more detail in Chapter 4. To this end, based on all of the discussions in this section and the predictions of the agency and resource dependence theories, the following hypothesis is proposed:

Hypothesis 1. *The board index is positively associated with financial performance.*

3.3.2 Age Diversity

Hambrick and Mason's (1984) upper echelons perspective proposes that age is one of the demographic variables that can be used as a proxy of senior executives' psychological attributes that influence decision-making and performance. Furthermore, Mudambi and Treichel (2005) state that age can also be viewed as a proxy for experience, as older directors are assumed to have greater experience than younger directors do. The age of directors on a board is also seen as an important factor of board composition and Gilpatrick (2000) argues that the ideal NEDs to have on a board are older and mature retired executives who tend to have more experience. However, Mahadeo et al. (2012) state that a more effective board should be diverse in terms of age for the following reasons:

- older directors provide greater expertise, experience and potentially have a bigger network
- middle-aged directors are more suitable for the day to day running of the firm and the major executive duties
- younger directors can bring new, creative and innovative ideas.

Age as a variable can represent differences in skills, attitudes, personalities, values and traits of individuals (Ferrero-Ferrero, Fernandez-Izquierdo & Munoz-Torres, 2015). Scholars argue that these differences can be categorised into generations because the social and historical experiences from a given generation have influenced the individuals' behaviours (Sullivan et al., 2009; Twenge et al., 2010). The general consensus amongst scholars about the four major generations of the 20th century is as follows: the Greatest Generation (born 1922-1945), Boomers (born 1946-1964), Xers (born 1965-1983) and Generation Y (born 1984-2002) (Sullivan et al., 2009; Twenge et al., 2010; Ferrero-Ferrero et al., 2015). Twenge et al. (2010) argue that members of

the Greatest Generation age group are self-disciplined and extremely loyal employees who believe in traditional values. The Boomers believe that hard work leads to success, they value independent thinking and have extrinsic measures of career success (Twenge et al., 2010). Xers are said to be influenced by financial, family and societal insecurities that dominated their childhoods and although they lack solid traditions, they are more flexible and highly accustomed to rapid change (Ferrero-Ferrero et al., 2015). Twenge et al. (2010) state that the characteristics of Generation Y members are less clear but because they grew up with the internet, they are innovative and are more accustomed to gaining access to information quickly. The growth of technological and social change over the past several decades means that the generations currently in the workplace have had different life experiences, beliefs and values (Pitt-Catsouphes, Mirvis & Berzin, 2013). Therefore, directors of different age groups can increase the overall diversity of the board of directors through access to a range of expertise, perspectives and skills (Mahadeo et al., 2012).

Kang, Cheng and Gray (2007) state that there is an active promotion of age diversity in boards because the experiences, skills and knowledge of different age groups can improve the overall knowledge on the board. Age related differences in teams could also benefit companies by providing a greater diversity of skills and multiple perspectives (Hertel et al., 2013). Mudambi and Treichel (2005) state that younger directors are assumed to have better understanding of key aspects of today's economy such as technology, markets and business metrics. From a resource dependence perspective, younger directors will be able to provide key resources to firms through their innovative nature and understanding of the modern economy (Mudambi & Treichel, 2005). Research by Barker and Mueller (2002) found that CEO age was positively associated with research and development spending in firms. They further concluded that younger CEOs tend to be more risk seeking and increase spending on research and development costs because their career and financial security concerns have a longer time horizon (Barker & Mueller, 2002). Hambrick and Mason (1984) stated that one of the most enduring findings about senior executives' age is that older managers or executives tend to be more conservative, follow lower growth strategies and are more risk averse. This is consistent with the work of Zhihua (2010) who observed that older directors tend to be more conservative making them

more risk averse than younger managers, and more likely to comply with all the rules and routines of the firm. Therefore, older directors are expected to resist major changes in their organisations in order to maintain the status quo and a study by Frosch (2011) showed a positive relationship between the average age of employees and innovation. An earlier study by Child (1974) suggested that older executives might have greater difficulty in grasping new ideas and implementing organisational change. In addition, Barker and Mueller (2002) argue that older CEOs and executives tend to focus more on goals that benefit them in the short term, as they would soon be reaching retirement age. Older directors are generally at a point in life where financial security and career security are of greater importance, therefore any risky actions which may have an adverse effect on their security are avoided (Zhihua, 2010). This view is consistent with agency theory that proposes that agents do not always act in the best interests of shareholders but rather seek to maximise their own wealth (Hillman & Dalziel, 2003).

Over the past years, researchers have examined age by looking at older workers and generational differences in the workplace; however, the results have been inconclusive, as many empirical studies have only considered age as a control variable (Hertel et al., 2013; de Lange et al., 2010). In addition, Shore at al. (2009) state that research on age diversity is much less developed than research on race and gender, suggesting that the potential effects of age diversity on performance have not yet been fully established. Prior findings on the relationship between age diversity and corporate performance are inconsistent. Mahadeo et al. (2012) found positive effects of age diversity on firm performance whilst Zimmerman (2008) found no significant effects. Kilduff, Angelmar and Mehra (2000) examined 35 simulated firms with a total of 159 managers and found significant evidence to suggest that age diversity of team members positively affects firm performance. A different body of research by Kunze, Boehm and Bruch (2013) explored a common stereotype in literature that older workers are more cognitively rigid, short term focused and resistant to change than their younger counterparts. Their study examined a sample of 2,981 employees from various companies in Germany and found that older workers were less resistant to change than their younger counterparts (Kunze et al., 2013). In terms of linking age and gender, Wegge et al. (2008) reported that age and gender seem to have independent effects on intricate decision-making tasks. The arguments for age

heterogeneity and homogeneity on boards are inconclusive as issues on generational gaps can also impact board effectiveness, hence further research must be conducted (Kang et al., 2007). However, Harrison and Klein (2007) argue that age variety or diversity broadens the cognitive, behavioural repertoire of the board, which leads to better decision making and ultimately improves performance. Consequently, the following hypothesis is proposed:

Hypothesis 2. *Age diversity on the board of directors is positively associated with financial performance.*

3.3.3 Gender Diversity

In 2005, the Ethical Investment Research service examined over 1,600 companies listed on the FTSE All World Development Index and found that women only made up 7% of directors in these leading companies (Maier, 2005). Given this scarcity of female directors on boards, gender diversity has become one of the most debated, but important, element of board composition that has led to a growing body of research in business ethics and corporate governance (De Cabo, Gimeno & Nieto, 2012). Although female representation on corporate boards is also now of increasing importance for policy makers around the world, there has been a slow advancement of the number of women on the board of directors (Terjesen, Sealy, Singh, 2009). Many European countries, such as Spain and France, have imposed minimum quotas for female representation on the boards of publicly traded organisations (De Cabo et al., 2012). The UK, on the other hand, has implemented voluntary standards to promote gender balance in boards (Visser, 2011). In 2012, the UK government put gender diversity in the boardroom at the top of its agenda, however in that same year nine out of ten board roles went to men (Neate, 2012). According to Singh and Vinnicombe (2004) female representation on boards is an area of concern because women's talents are not being fully utilised. In addition, male directors had formed an elite and exclusive group in the UK's corporate world which led to more homogenous boards than otherwise would have been the case. This makes gender diversity an important element of achieving board heterogeneity (Singh & Vinnicombe, 2004).

There have been inconsistent findings on the impact of gender diversity on firm performance and the existing literature on women on corporate boards is inter-disciplinary with research emerging from psychology, sociology, leadership, finance, management and corporate governance fields (Terjesen et al., 2009). De Cabo et al. (2012) found that banks with larger boards had a higher proportion of female directors on their boards, which could be a signal of smaller boards preferring homogeneity. Although some research identified that women have traits that make them well positioned for roles requiring trust, Bigelow and Parks (2006) (as cited in Terjesen et al., 2009) observed that investors were willing to invest 300% more in male led firms than female-led ones. In contrast to this, Farrell and Hersch (2005) found that female directors were more likely to serve on boards of better performing firms suggesting this could be for two reasons. One could be that a shortage of supply allows women to self-select the companies in which they serve or the better performing firms were able to focus more on diversity goals. Carter et al. (2003) drew upon agency theory to explore the link between gender diversity and firm value, and found a positive relationship between the two on Fortune 1000 boards. Although the findings on gender diversity have produced mixed results, Konrad, Kramer and Erkut (2008) pointed out that there should be more than one female director on a board before female members can exert a positive influence on performance.

Liao et al. (2015) identified that males and females are culturally and socially different which is reflected in their personalities, communication skills and educational backgrounds. Furthermore, a report by the Financial Reporting Council (2012) observed that women contribute significantly to a board as they are generally more committed, diligent, innovative and bring good dynamics to the board. Hillman and Dalziel (2003) state that in order for boards to effectively exercise their monitoring function, they need to have the right mix of experience and capabilities to monitor management and evaluate business strategies. Fondas and Sassalos (2000) argued that from an agency theory perspective, gender diversity through more female representation on boards, should improve the board's monitoring role in protecting shareholders' interests. This is because women have higher expectations about their responsibilities as directors which can make the board more effective in monitoring management (Fondas & Sassalos, 2000). Furthermore, Huse and Grethe-Solberg

(2006) found that female directors can enhance board independence and improve corporate governance of firms. This is because women tend to take directorship roles more seriously by being better prepared for meetings and through more questioning and discussions than their male counterparts (Singh & Vinnicombe, 2004). This is reflected in a study conducted by Singh and Vinnicombe (2004) who found that the FTSE 100 firms in the UK that had female directors were quicker to adopt and report the recommendations of the Higgs review than male dominated boards.

Other scholars who use the resource dependence framework argue that because firms operate in increasingly complex and uncertain environments, their boards must be composed of diverse individuals who can provide a breadth of resources (Terjesen et al., 2009). Hillman at al. (2007) further state that women have the potential to link firms to different networks or resources than men do by virtue of their different values, experiences and beliefs. In this context, greater board diversity expands board members' networks and contacts, which in turn expands the networks and links of companies with their external environment (Hillman et al., 2000). A combination of societal expectations, institutional investors and recommendations from codes of best practice have placed pressure on firms to be more diverse and legitimate in their governance practices (Hillman et al., 2007). Research on firm legitimacy suggests that larger firms are more visible to the public therefore will experience more pressure to conform to the expectations of society (Suchman, 1995). Bilimoria (2006) proposes that female directors can also provide legitimacy to firms as their presence signals that a firm values the success of women in society. Institutional investors have also increased their scrutiny of boardrooms for diversity; therefore the reputation and credibility of a firm may be improved through gender diversity (Terjesen et al., 2009). In light of this, large firms, such as those in the FTSE 350, can improve their legitimacy and gain from a wider range of resources through gender diverse boards. A different body of research by Hillman et al. (2007) found that female representation on boards is linked to firm size, industry type and firm diversification strategy. Some studies have found correlations between particular industry sectors and female directors, such as retail, finance, media, banking and health care sectors (Hillman et al., 2007; McCormick-Hyland & Marcellino, 2002). A retired CEO of Avon Products Inc. concluded that because 60% of the company's purchases were made by women,

it made more business sense to have female directors on the company's board (Sweetman, 1996). Therefore, in certain markets, female directors may provide a vital resource by suggesting new strategies of bringing products to market based on knowledge of females as customers (Singh & Vinnicombe, 2004).

Traditionally, women have made fewer investments into education and work experience which is reflected in lower pay and promotion (Tharenou, Latimer & Conroy, 1994). Research by Oakley (2000) suggested that women are not offered organisational rewards, such as promotions or developments, because of the assumption that women lack adequate human capital for board positions. However, upper echelons theory suggests that individuals make decisions based on their cognitive bases and Pelled, Eisenhardt and Xin (1999) further suggest that people of different genders have different beliefs, attitudes and perspectives based on these differences. Therefore gender diversity can have a significant impact on the overall diversity of a board and on firm performance (Hillman et al., 2007). Gender is also said to be associated to risk seeking behaviour and Huang and Kisgen (2013) observed that male executives were more risk seeking than female executives when it came to issuing debt and acquisitions. However, Johnson and Powell (1994) argue that the perception that women are more risk averse than men is a stereotypical preconception that does not reflect women's actual economic behaviour. Therefore, the following hypothesis is proposed:

Hypothesis 3. *Gender diversity on the board of directors is positively associated with financial performance.*

3.3.4 Education Diversity

Hambrick and Mason's (1984) earliest upper echelon model recognised that one's formal educational background may yield rich information. Therefore, to some extent, the skills and knowledge base of a person can be reflected through their educational background and qualifications (Hambrick & Mason, 1984). Hitt et al. (2001) further suggested that knowledge is a vital competitive asset for firms that can be gained through formal learning or learning on the job. Individuals with higher education levels are assumed to have higher intellectual potential and tend to give

more reasons and objectives in the decision making process as they consider all stakeholders (Zhihua, 2010). Upper echelons researchers therefore suggest that education, to some extent, is an indicator of an individual's values and cognitive base and that this can play a role in establishing strong inter-organisational ties (Hambrick, 2007). Several studies noted by Hambrick (2005) found positive associations between executives' formal education, innovation and company growth. However, there have been inconsistent findings on the impact of education on organisational outcomes. Wally and Baum's (1994) study proved the assertions of upper echelons theory by examining the impact of executives' education in strategic decision-making. This study found executives with higher education levels have greater cognitive complexity and such complexity provides greater ability in absorbing new ideas and accepting innovations. Furthermore, a handful of studies have found that more innovative organisations are led by executives with higher education levels (Barker & Mueller, 2002).

Naranjo-Gil, Maas and Hartmann (2009) showed that younger and shorter-tenured financial directors with an educational background in business are associated with the use of innovative management accounting instruments. In line with these findings, Pavlatos (2012) examined a sample of Greek hotels and found that chief financial officers with a business-oriented educational background displayed more comprehensive use of cost-management systems. A different body of research has looked at the association between directors' education level and firm growth. Schutjens and Wever (2000) examined the determinants of new firm success and found no significant relationship between education levels of directors and new firm success. In line with these findings, a study of 48 new start-up firms in Korea found education to be positively correlated with profitability but not with growth (Jo and Lee, 1996). In contrast, Audretsch and Lehmann (2005) found that firm survival was positively associated with the education of directors and was even higher for directors who were educated to degree level and above. Most of the studies mentioned above focused on directors' education level, however there has been research that has associated university ranking with reputation and prestige (Zhihua, 2010). Lester et al. (2006) found that early stage investors place value on the educational prestige of an initial public offering firm's executives and, that educational prestige was attributable

to increased investor valuations. Therefore, the greater legitimacy of an initial public offering firm, as signalled by the educational prestige of its executives, allows it to improve early stage valuation by investors.

In terms of the impact of educational background on firm performance and board effectiveness, Cannella, Park and Lee (2008) found mixed results of both negative and positive correlations. However, Lee and Tsang (2001) pointed out that contradictory findings about the relationship between education level and firm success may be largely due to the confounding effect of firm size. They further concluded that the contribution of directors' education level to venture growth of larger firms is statistically greater than that of smaller firms. Education plays a less important role in running smaller firms because they are simpler. This is because, in general, the operations of larger firms are relatively more complex, require more planning and more knowledge (Lee & Tsang, 2001). Therefore, despite the contradictory findings, Lee and Tsang (2001) proposed that education does indeed have a positive impact on firm success and growth because education equips an individual with various skills that are essential in running an organisation. Lester et al. (2006) suggest that individuals attribute different values and skills to status characteristics such as education level, networks, and experiences. This is consistent with D'Aveni's assertion that "*going to the proper schools, having impressive prior work experience and associating with the right people indicates higher status, aggregated prestige and skill*" (1990, p.124). In their study of investor valuations, Lester et al. (2006) found that investors seem to reward firms with high levels of executive educational prestige where educational prestige is the reputation and ranking of the university an individual attended.

Upper echelons theorists articulated that education can serve as an indicator of one's values and cognitive preference only if it is assumed that most people take decisions about their education very seriously (Hambrick & Mason, 1984). Looking at business education, other theorists and critics have argued that MBA programmes attract conservative, risk-averse students and teach analytic skills geared toward avoiding big mistakes or losses (Barker & Mueller, 2002). Therefore, MBA

programmes are perceived as doing little towards developing innovative or risk taking skills in students. A similar argument may be applied for legal education, which also seems to place little emphasis on innovation (Barker & Mueller, 2002). However, historically, compensation and salaries of employees and managers have been strongly linked to the education and experience they possess. Organisations have also heavily invested in different training courses designed to build and improve human capital and performance (Combs et al., 2006). Therefore, researchers have long understood that human capital, especially one's education and training, plays a vital role in organisational performance (Crook et al., 2011). Zhihua (2010) proposed that the education of directors is also beneficial to companies in improving non-financial performance such as corporate social responsibility. This is because, the higher the education of directors, the longer they would have stayed in an educational institute that would have provided more social values. Therefore directors or executives with advance education will give more reasons and objectives in decision making and will be better placed to not only consider the demands of all stakeholders, but to pay more attention to social problems (Zhihua, 2010). Furthermore, Lee and Tsang (2001) state that the increasing complexity of the global business environment appears to indicate that education is a vital entrepreneurial quality. Based on these arguments, the following hypotheses are proposed:

Hypothesis 4. *The education level of the board of directors is positively associated with financial performance.*

Hypothesis 5. *The educational diversity of the board of directors is positively associated with financial performance.*

3.3.5 Experience Diversity

Carpenter et al. (2004) recognise that the expertise and skills of directors can be reflected through their previous experience. In addition, Mahadeo et al. (2012) argue that a wider range of knowledge, skills and occupations is vital for complex firms with multi-dimensional business needs and various functions. Carpenter and Westphal (2001) suggest that research on corporate governance and board

composition can be advanced by going beyond an emphasis on the board's propensity to exercise control over decision-making. They suggest this line of research should have a wider focus on whether directors possess relevant skills and experiences that enable them to effectively exercise control and monitor management. In line with this, Kroll, Walters and Wright (2008) propose that board effectiveness can be explained in part through the possession of suitable knowledge gained from directors' experience. Therefore, boards of directors who do not have relevant experience may be incapable of fully contributing to the strategic decision making of a firm (Kroll et al., 2008). From an agency theory perspective, directors with suitable knowledge gained through experience will not only be better monitors, but will also be useful advisors to top managers (Hillman & Dalziel, 2003). Resource dependence theory views director experience as a vital intangible resource that is more likely to produce competitive advantage due to experience being unique and hard to imitate (Crook et al., 2011). Furthermore, upper echelons scholars suggest that senior executives carry essential and unique skills that are displayed through their perceptions and beliefs, and these perceptions and beliefs are ultimately based on executives' experiences (Nielsen & Nielsen, 2013).

Although agency, resource dependence and upper echelons theories all emphasise the importance of experience in board effectiveness and decision-making, existing studies on the impact of director experience and performance have produced mixed results. Previous studies in management literature have examined the impact of director experience on different aspects of firm performance. For instance, a study by Fich (2005) revealed that shareholders react positively to the appointment of non-executive directors with past CEO experience in other firms. However, Gray and Nowland (2013) found that both the depth and breadth of directors' prior experience is valued by the market at the time of the directors' appointment. Hillman and Dalziel (2003) proposed that greater experience can enhance a director's ability to monitor firm performance and provide advice to the organisation. A different body of literature has examined the proposition that directors with certain functional backgrounds such as lawyers, marketing specialists and government officials, may provide important expertise and experience that is useful for advice and counsel (Hillman & Dalziel, 2003). In agreement with this notion, a study by Westphal and Milton (2000) found

that directors with professional experience were able to understand business situations more effectively and made better acquisition decisions. Guner, Malmendier and Tate (2008) reported that directors with links to commercial banks assisted with access to their companies to acquire external financing. Agrawal and Chadha (2005) found that companies with financial expertise on their boards display a lower likelihood of accounting restatements. Other studies have found significant evidence to suggest that directors with political links and legal expertise are beneficial to their companies (Agrawal & Knoeber, 1996; Krishnan, Wen & Zhao, 2011).

Gray and Nowland (2013) recognise that experience and expertise are essential for an effective board because directors are required to perform numerous complex tasks which need skill and expertise. Although prior business experience and expertise in areas such as accounting, finance and law help directors in effectively performing their duties, Gray and Nowland (2013) argue that prior experience as a director is the most relevant experience that directors can possess. In addition to functional background, Le, Kroll and Walters (2013) note that firm and industry-specific experience are essential to directors' abilities to perform their duties as this experience can impact decision making and performance. Industry specific human capital can be defined as implicit knowledge and experience of an industry's structure, technologies, competitive environment and dynamics (Le et al., 2013). According to Hiebl (2013) directors with functional experience in a certain core industry will be more familiar with the activities in that industry, therefore uncertainties in the micro and macro environments will be better anticipated and prepared for. Various scholars have argued that an individual's previous career experiences shape and influence their decision making process through the knowledge gained from their past experiences (Beckman, 2006; Sorensen, 1999). Therefore, directors' professional knowledge in industry and management should be beneficial to the quality of their decision-making and contribute to corporate competitive advantage, which ultimately leads to increased performance (Gray & Nowland, 2013).

After the most recent financial crisis of 2007/8, Aldamen et al. (2012) found that during the crisis performance was positively related to the audit committee's

expertise. An interesting proposition was brought forward by Li and Ang (2000) who suggested that directors with specialised skills or those with good reputations are needed to provide advice when the board has to make major decisions. Such directors do not need to attend to all routine business decisions but add value in special situations. This is evident in the case of Kroll et al. (2008) who found that directors with prior experience make better acquisition decisions and exert more influence on the board. This notion differs from that of Nielsen and Nielsen (2013) who found that the industry experience of executives had no effect on decision making and financial performance. However, Thorsell and Isaksson (2014) noted that previous research may have produced mixed findings on the influence of directors' experience on firm performance due to issues of measurability and a shortage of available data. Kroll et al. (2008) defined director experience as the number of years a director has been a manager or board member of a firm within the same industry, whilst Certo et al. (2001) defined director experience as the number of cross directorships a board member has held. Other scholars such as Kang et al. (2007) and Bodnaruk et al. (2008) used age as a proxy for director experience suggesting that older directors should have more experience than younger directors. For that reason, it is important to define the term director experience for this study and provide a proxy for experience, skills and expertise of directors.

The prior experience of directors is useful for learning and developing skills of how to be a director and, furthermore, developing an appreciation of the role (Westphal & Milton, 2000). The role of a director goes beyond reading financial statements and involves absorbing comprehensively large amounts of complex information quickly, evaluating the actions of management and how these actions impact the firm (Khanna, Jones & Boivie, 2014). Therefore, when directors have prior experience at senior levels in a firm, the human capital they develop should be invaluable as they should be more effective in providing strategic advice (Khanna et al., 2014). In addition, Fich (2005) argues that directors with previous experience of being a director provide unique expertise and are of greater value than directors of other occupations or positions. Directors with such experience are expected to produce high-quality outcomes through their pool of knowledge, skills and connections (Conger, Lawler & Finegold, 2002). External connections developed through previous

board appointments and industry experiences represent valuable capital as such connections provide access to vital resources (Hillman, 2005). This view is in line with the resource dependence perspective that views directors as a key link in gaining scarce resources and valuable information needed by the firm (Hillman & Dalziel, 2003). Upper echelons theorists propose that managerial (in this case directors') inclinations, strategic choices and decisions are explained by the directors' pre-existing knowledge systems and skills. These knowledge systems and repertoire of skills are primarily derived from prior professional experience (Bailey & Helfat, 2003; Kor, 2003; Kor & Sundaramurthy, 2008). Therefore, directors' current and past professional experiences as board members or as senior executives can be a strong indicator of their human capital (Certo, 2003). The main benefit of directors with senior level experience is that they provide the unique resource of direct experience which indicates greater intelligence and effectiveness (Khanna et al., 2014). Taken together, the arguments presented suggest that the previous appointments of directors are a suitable proxy for experience in this study. Therefore, the following hypotheses are proposed:

Hypothesis 6. *The experience level of directors is positively associated with financial performance.*

Hypothesis 7. *The experience diversity of directors is positively associated with financial performance.*

3.3.6 Multiple Directorships

Directors' external ties are also referred to as inter-locking directorships, cross directorships, multiple directorships or directors' networks in literature. Hillman et al.'s (2009) study notes that directors' networks can be measured by the number of other directorships they hold on other boards. Therefore, this study will use the term multiple directorships to refer to directors' external ties. Historically, multiple directorships date back to the 1900s where the US congress passed the Clayton Act which prohibited multiple directorships among firms under the notion that "…*no man can serve two masters*…" (Drago et al., 2015, p.40). These external ties were viewed as instruments for decreasing competition thus damaging the market. In a similar vein,

Ferris, Jagannathan & Pritchard (2003) suggested that multiple directorships keep directors extremely busy which can reduce monitoring and oversight of management and ultimately decrease firm value. However in the second part of the 20th century many studies examined multiple directorships and made several theoretical and empirical contributions (Drago et al., 2015; Geletkanycz & Boyd, 2011; Perry & Peyer 2005). A view consistent with agency theory is found in the UK Corporate Governance Code 201) which states that the independence of non-executive directors may be affected when these directors hold multiple directorships or when they hold significant links with other directors (Financial Reporting Council, 2014). In contrast to this, Sarkar and Sarkar's (2009) research supports resource dependence theory that states directors with multiple directorships have better networks which help firms to create vital linkages with external constituencies. This in turn not only provides access to external resources for companies, but also reduces uncertainties (Hitt et al., 2001). Furthermore, upper echelons theory proposes that directors' external ties influence company strategy because directors act on the basis of their backgrounds and experiences (Nielsen & Nielsen, 2013).

Despite the theoretical contributions that have been made by scholars, there is still an ongoing debate about the benefits and limitations of multiple directorships as previous studies have produced inconsistent findings (Drago et al., 2015; Renneboog & Zhao, 2014). Studies by Geletkanycz and Boyd (2011) and Larcker, So and Wang (2013) both documented a positive association between multiple directorships and firm performance. Furthermore, Di Pietra et al. (2008) examined the effect of multiple directorships on the share prices of Italian companies and found a positive effect. Other scholars in the same field have researched the impact of directors' external ties on firm value. After Harris and Shimuzu (2004) found a positive association between multiple directorships and abnormal security returns, they concluded that firms may seek to employ directors with multiple directorships because such directors are more likely to add value to the firm. Carpenter and Westphal (2001) report findings consistent with this and propose that directors may increase their primary employer's shareholder value if they obtain valuable knowledge and strategies used by other companies. The main argument from these studies is that multiple directorships provide better access to information that is beneficial in the decision making process

of firms (Omer, Shelley & Tice, 2014). In contrast to this, Fich and Shivdasani (2006) found that firms with boards that had multiple directorships were associated with weaker profitability, weak corporate governance, lower market to book ratios and had lower sensitivity of CEO turnover to firm performance. Likewise, Jiraporn, Singh and Lee (2009) examined whether multiple directorships reduce a director's ability and effectiveness in monitoring management. They reported that directors with multiple directorships were more inclined to be absent from board meetings and served on fewer board committees. However Sarkar and Sarkar (2009) found that independent directors with multiple directorships attended more board meetings and were more likely to attend a firm's annual meeting. Therefore empirical evidence on the impact of multiple directorships on firm value and performance is mixed.

A different body of literature has found directors with multiple directorships to be a useful resource in mergers and acquisitions. Renneboog and Zhao (2014) found a significant positive association between takeover frequency and linkages through directorships between the bidder and the acquirer. In addition, Cai et al. (2010) show that informational asymmetries are lower when the bidder and acquirer have a common director, suggesting that better connected firms will be more active in mergers and acquisitions. Firms may also seek out better networked directors in order to benefit from other intangible resources such as information, business practice or prestige. Dart (2004) suggested that banks may be more inclined to lend money if the borrower has reputable and prestigious directors. If this is the case, then the opportunity to gain easier access to capital markets becomes an essential advantage for any firm (Drago et al., 2015). Nicholson and Kiel (2007) stated that directors' external ties are associated with prestige, visibility and reputation, which makes multiple directorships a valuable resource for firm legitimacy. Likewise, Clements, Neill and Wertheim (2015) contend that the number of multiple directorships a director holds is related to their reputational capital. Therefore, only highly qualified directors are given the opportunity to serve on numerous boards and such directors are effective in their governance roles (Clements et al., 2015). Multiple directorships also have the potential to increase a directors' knowledge in varied regulatory and industrial environments, to learn different management styles and to learn new strategies (Loderer & Peyer, 2002). This experience in turn enables directors to

provide better advice and offer better monitoring which should help in reducing agency costs (Jiraporn, Kim & Davidson, 2008).

On the other hand, there is still considerable debate in academic literature on whether multiple directorships enhance or constrain corporate governance effectiveness which ultimately impacts firm performance (Renneboog & Zhao, 2014). Directors have numerous responsibilities which include a duty of care and a duty of trust or fiduciary duties. The duty of care calls for directors to exercise independent judgement with reasonable skills, diligence and care whilst the fiduciary duties require directors to act in the best interests of the company, to avoid conflict between their duties and personal interests and to behave with integrity and honesty (Tricker, 2012). In line with this, Clements et al. (2015) argue that when a director holds multiple directorships, it has the potential to either add or subtract from their effectiveness in fulfilling their fiduciary duties to each firm. Likewise, Jiraporn et al. (2008) show that the busyness of directors through multiple directorships is negatively related to firm value. They further argue that directors who serve on multiple boards are too busy to effectively monitor management which may exacerbate agency conflicts. Other scholars contend that some companies may hire directors with multiple directorships in order to obtain a higher degree of freedom and thus move away from their fiduciary duties to shareholders (Drago et al., 2015). However, a significant number of studies have found benefits associated with multiple directorships including circulating information across companies, reducing scanning costs and serving as a mechanism for diffusing innovation (Collins & Clark, 2003; Hillman & Dalziel, 2003; Omer et al., 2014). Furthermore, upper echelons, resource dependence and agency theories all support the proposition that directors obtain vital information and experience from multiple directorships. This not only enhances directors' effectiveness in monitoring and advising management, but also enhances their effectiveness in strategic decision making (Hillman et al., 2009; Nielsen & Nielsen, 2013). Therefore this study proposes the following hypothesis:

Hypothesis 8. *Multiple directorships on the board of directors are positively associated with financial performance.*

3.4 Contextual Factors and Extension of Hypotheses

The literature reviewed in Chapter 2 identified that prior studies on board diversity and firm performance have produced mixed findings because contextual factors were not taken into consideration. This thesis attempts to address this gap in literature through also testing the association between board diversity and financial performance within different industries to account for contextual factors. O'Connor and Byrne (2015) note that there has been an ongoing debate in recent years in corporate governance literature about whether a 'one-size-fits-all' approach is appropriate. Dowell, Shackell and Stuart (2011) cautioned against adopting a universal corporate governance approach and argued that the effectiveness of corporate governance mechanisms are contingent upon a firm's circumstances and the firm's environment. This is consistent with the 'one size does not fit all' notion that suggests corporate governance practices are not universal and vary across countries, markets and industries (Kelton & Yang, 2008). Capelle-Blancard and Petit (2017) noted that industries are unique in that there are different internal competencies and external pressures inherent in each industry. Therefore, they suggest that it is crucial for research to address industry differences, however this should not necessarily invalidate large cross-sectional analyses (Capelle-Blancard & Petit, 2017).

With regards to board diversity, a study by Ararat et al. (2015) contends that when examining the link between board diversity and performance, it is important to consider contextual factors as the performance effect of diversity can be task specific and contingent upon the context. Similarly, Black et al. (2012) suggest that good corporate governance is often 'local'; however, there is still limited evidence on the extent to which corporate governance practices can be applied universally across countries or across firms within a country. The majority of previous research in corporate governance has examined the link between board composition and firm performance from an agency theory perspective. However, Filatotchev and Allcock (2010) argue that this is a 'closed system' approach as it posits a universal set of linkages that does not pay much attention to the different contexts in which firms are embedded. This is consistent with the work of Aguilera et al. (2008) who pointed out that the 'under-contextualized' nature of the agency theory framework limits its ability

to explain the diversity of corporate governance practices in different organisational and institutional contexts.

A body of research under resource dependence theory argues that the resource provision of directors is more likely to benefit firms only at certain stages of their life cycle. In line with this, Daily et al. (2002) found evidence to suggest that the resource provision role of directors is more crucial for new and small firms than for larger mature firms. Other research in resource dependence theory has found that certain directors may become less valuable to firms as the external environment changes. Cameron, Whetten and Kim (1987) argued that directors' role as resource providers appeared to be more vital during times of decline and bankruptcy because distressed firms normally experience a decrease in their relative resource bases. These limitations do not invalidate resource dependence theory, instead they point towards the perspective that the need for external resources and information is a function of environmental demands. Hence, firms with varying levels of dependence will require different environmental linkages. Filatotchev and Allcock (2010) build on previous research by examining how the resources and capabilities that shape organisations' interdependencies with different business environments can mediate corporate governance practices. Their study proposes that the role and effects of corporate governance practices may differ in ways that are contingent upon the vital external and internal resources within the context of the firm's market or sector (Filatotchev & Allcock, 2010). Carpenter et al. (2004), who stated that it is important to examine firms at industry level because complex environments will require different resources and boards in comparison with stable industries and environments, support this. In parallel to this, Hiebl (2013) noted that contradictory results on certain upper echelons characteristics may be attributable to different industries as one size or structure may not fit all. This links well with research question 3 of this study, which is to explore and discuss the most desirable characteristics of a successful board between industries.

Ooi et al. (2015) point out that previous studies on board diversity have not taken into account industry-specific factors, which may influence firm outcomes. Whilst, Johnson et al. (2013) call for future research on board diversity to investigate

contextual factors in helping to reconcile the conflicting findings in prior studies. Therefore, this study directly responds to this call and adds to this body of knowledge by examining the link between board diversity and financial performance within industries. In line with this, the hypotheses developed in section 3.3 are reiterated and further extended by considering them within an industry setting. Therefore, the following hypotheses are proposed:

Hypothesis 9. *The association between the board index and financial performance differs between industries.*

Hypothesis 10. *The association between age diversity of the board of directors and financial performance differs between industries.*

Hypothesis 11. *The association between gender diversity of the board of directors and financial performance differs between industries.*

Hypothesis 12. *The association between education levels of the board of directors and financial performance differs between industries.*

Hypothesis 13. *The association between education diversity of the board of directors and financial performance differs between industries.*

Hypothesis 14. *The association between experience levels of the board of directors and financial performance differs between industries.*

Hypothesis 15. *The association between experience diversity of the board of directors and financial performance differs between industries.*

Hypothesis 16. *The association between multiple directorships on the board of directors and financial performance differs between industries.*

These hypotheses will be tested by grouping the study's sample into industries and these findings are presented and discussed in Chapter 6.

3.5 Contribution to Theory

This study makes two major contributions to theory. First, by extending Haynes and Hillman's (2010) and Jermias and Gani's (2014) work, this study integrates agency, resource dependence and upper echelons theories and thus contributes by overcoming the dominant and current myopia within the three streams of research based on a single theory perspective. In so doing, the study provides a more complete lens for exploring the link between board diversity and financial performance. In addition, the study places an emphasis on the monitoring, strategic and resource-provision roles of directors, however unlike other prior studies, this thesis does not solely focus on structural diversity but it also includes demographic diversity. Second, the main limitation with an agency theory perspective is that it does not take into account the fact that boards of directors require different skills and attributes in order to effectively execute their roles (Volonté & Gantenbein, 2016). Therefore, this study adds to the existing body of literature by overcoming this criticism through an integration of the upper echelons perspective bringing a focus on the attributes and skills that directors have and, in turn, their capability in performing their duties and roles effectively. In contrast, the upper echelons stream of literature has predominantly focused on senior managers and executives as being the 'people on top' rather than the board of directors. Therefore, this study integrates both agency and resource dependence theories placing greater emphasis on the board directors, allowing this study to investigate the upper echelons of the board of directors. Lastly, this study responds to Zattoni and Van Ees's (2012) study that examines the challenges of corporate governance research and suggests that a promising avenue for future governance research is to utilise a combination of theoretical paradigms that bridge the gap in literature on corporate governance.

3.6 Summary of Chapter

This chapter has discussed and presented the theoretical framework of this study by examining and discussing agency, resource dependence and upper echelons theory. The integration of these three theories provides an alternative theoretical paradigm to view the relationship between board diversity and financial performance in companies. From this framework, six variables that proxy different attributes of diversity were discussed alongside the construction of the hypotheses to be tested in this study. These hypotheses are further extended by examining them within different industries. Table 3.2 presents an extension of Table 3.1 and shows a summary of how the research questions are addressed by the theoretical framework and how the variables and hypotheses are subsequently developed. The next chapter presents and discusses the research design, sampling strategy and research methodology employed in this study.

Table 3.2 Summary of Research Questions, Theories, Independent Variables and Hypotheses

Research Question	Theory	Variables [4]	Hypotheses
Which theoretical framework is the best predictor of board diversity and financial performance?	**Upper Echelons Theory** Proposes that top executives' demographic characteristics are great predictors of performance.	✓ **Age** ✓ **Gender** ✓ **✓Education** ✓ **✓Experience** ✓ **✓ *Multiple directorships***	***Hypothesis 1.*** *The board index is positively associated with financial performance.* ***Hypothesis 2.*** *Age diversity on the board of directors is positively associated with financial performance.* ***Hypothesis 3.*** *Gender diversity on the board of directors is positively associated with financial performance* ***Hypothesis 4***. *The education level of the board of directors is positively associated with financial performance.* ***Hypothesis 5.*** *The educational diversity of the board of directors is positively associated with financial performance.* ***Hypothesis 6.*** *The experience level of directors is positively associated with financial performance.* ***Hypothesis 7.*** *The experience diversity of directors is positively associated with financial performance.* ***Hypothesis 8.*** *Multiple directorships on the board of directors are positively associated with financial performance.*
Is there a relationship between board diversity and financial performance?	**Resource Dependence Theory** Maintains the view that the board of directors is a key link between a company and the resources it needs to increase performance.	✓ **✓Education** ✓ **✓Experience** ✓ **✓ *Multiple directorships***	
Does the relationship between board diversity and financial performance differ amongst industries?	**Agency Theory** Asserts that a key role of directors is to monitor management on behalf of shareholders, as effective monitoring can reduce agency costs and improve performance	✓ **✓Experience** ✓ **Board size** ✓ **Non-executive directors** ✓ **Board independence** ✓ **Board committees** ✓ **Disclosure**	

[4] The variables with a double tick are predicted by more than one theory.

Hypothesis 9. *The association between the board index and financial performance differs between industries.*

Hypothesis 10. *The association between age diversity of the board of directors and financial performance differs between industries.*

Hypothesis 11. *The association between gender diversity of the board of directors and financial performance differs between industries.*

Hypothesis 12. *The association between education levels of the board of directors and financial performance differs between industries.*

Hypothesis 13. *The association between education diversity of the board of directors and financial performance differs between industries.*

Hypothesis 14. *The association between experience levels of the board of directors and financial performance differs between industries.*

Hypothesis 15. *The association between experience diversity of the board of directors and financial performance differs between industries.*

Hypothesis 16. *The association between Multiple directorships on the board of directors and financial performance differs between industries.*

CHAPTER 4 RESEARCH METHODOLOGY AND ANALYSIS METHODS

4.1 Introduction to Chapter

This chapter presents and discusses the research methods, methodology and empirical design of the regression models adopted in this thesis. The aims of this chapter are first, to provide a comprehensive explanation of the philosophical underpinning, research design and sampling strategy used in this study. Second, the chapter presents clear definitions and measurements of the dependent, independent and control variables that are used. Lastly, this chapter discusses the diagnostic checks undertaken and any econometric issues in the data, in order to determine the appropriate regression model.

The chapter is organised as follows: Section 4.2 presents the research paradigm, which is purely a positivist approach. Section 4.3 discusses and evaluates the research methods and design, which focus on quantitative methods and secondary data gathered from different sources. Section 4.4 presents the definitions and measurements of the independent, dependent and control variables. Section 4.5 discusses the characteristics of the data set and presents the results from the regression diagnostic tests in order to the appropriate multivariate technique. Section 4.6 discusses the empirical design of the regression model and the instrumental variables adopted. Section 4.7 discusses an alternative regression model that is used for robustness purposes. Section 4.8 discusses the ethical considerations for this research, and finally Section 4.9 summarises the main points discussed in this chapter. The research approach discussed in this chapter will contribute to answering the research questions and objectives previously outlined in Chapter 1. These are detailed in Table 4.1.

Table 4.1 Summary of Research Objective and Research Questions

Research Objective and Research Questions:	
Research Objective :	*To examine the impact of board diversity on the financial performance of FTSE 350 companies in the UK.*
Research Question 1:	*Which theoretical framework is the best modelling tool of board diversity and financial performance?*
Research Question 2:	*Is there a relationship between board diversity and financial performance?*
Research Question 3:	*Does the relationship between board diversity and financial performance differ amongst industries?*

4.2 Research Philosophy

Many debates amongst philosophers are about issues of ontology and epistemology (Blaikie, 2010). Easterby-Smith, Thorpe and Jackson (2012) simply define ontology as the nature of reality and existence, whilst epistemology is about the best ways of enquiring into the nature of the world. Generally, realism and subjectivism are the two ontological positions that represent the traditional and contrasting presumptions about the nature of social reality (Gill & Johnson, 2010). According to Easterby-Smith et al. (p.19, 2012) realism places emphasis on the world being external and concrete, and that *"…science can only progress through observations that have a direct correspondence to the phenomena being investigated…*". The realist's philosophical stance is that reality exists independently of the researcher's mind, therefore there is an external reality (Sobh & Perry, 2006). In addition, the realists believe that social reality (knowledge) can be investigated and discovered by the researcher (Blaikie, 2010). In contrast, the subjectivist's philosophical stance is that social reality (knowledge) is created by the researcher, accounting for consciousness and perception (Gill & Johnson, 2010). This thesis is conducted in the broader scope of finance research that is dominated by the positivist

and realist paradigm (Lagoarde-Segot, 2015). In a similar vein, objectivism is the epistemological view that, *"…things exist as meaningful entities independently of consciousness and experience, that they have truth and meaning residing in them as objects…*" (Crotty, 1998, p.5). Thus, the existence of social reality is the very first presumption of an objective epistemology and this is the epistemology that underpins the philosophy of positivism (Crotty, 1998). The nature of this study's research questions warrants a realist ontological stance and a positivist epistemological stance based on the assumption that reality is external and objective. This objectivist approach supports the development of quantitative and econometrics-based research (Schinckus, 2015).

4.2.1 Epistemology

Epistemology is the study of the nature of knowledge and justified belief and is concerned with how knowledge is acquired and validated (Carter & Little, 2007). Crotty (1998, p.3) simply defines an epistemology as, *"…a way of understanding and explaining how we know what we know…"*. Epistemological assumptions in turn determine the way a researcher views the world, the methodologies their research will employ and the justification of their choices (Easterby-Smith et al., 2012). An analysis of the financial stream of research conducted by Lagoarde-Segot (2015) reveals that academic finance research is dominated by the positivist research paradigm and governed by an objectivist epistemology. In addition, an econometric methodology is often employed in finance research and in the logical positivist tradition (Lagoarde-Segot, 2015). Likewise, previous studies on corporate governance and performance show that it is an area dominated by the epistemological understanding that phenomena can be examined through objective categories and verified by empirical scientific methods (Hillman & Dalziel 2003; Ahrens & Chapman, 2006; Mahadeo et al., 2012). This is the philosophy of positivism which looks at observable reality and where the truth is achieved "*…through the verification and replication of observable findings concerning directly perceivable entities or processes...*" (Clark, 1998, p.1243). Historically, corporate governance research has been dominated by studies following a positivist philosophy by using quantitative methods to test predictions based on agency theory (Daily et al., 2003; Dalton et al., 2007; Zattoni, Douglas & Judge, 2013). A review of studies published in the Corporate Governance: An

International Review Journal revealed that the majority of studies published between the years 2008 and 2010 adopted an explanatory approach characterised by deductively testing theory driven hypotheses (Zattoni & Van Ees, 2012). In addition, Ketokivi and Mantere (2010) observed that most of the studies in governance research have used statistical analysis to study large data sets. Although other methods have been used in governance research, Crow, Lockhart and Lewis (2013) note that studies underpinned by a positivist epistemology have produced significant empirical work in the corporate governance field.

Positivism is an epistemological position that proposes applying natural sciences methods to social reality and presumes that knowledge is obtained through gathering facts and testing hypotheses (Bryman & Bell, 2015). The central idea of positivism is that the social world exists externally, therefore its properties should be measured using objective methods, as opposed to subjective ones (Easterby-Smith et al., 2012). Positivism is an objective philosophy, as it seeks to test theories to provide a greater understanding of occurrences and it is beneficial in that it is quantifiable, it allows testing of data to get a defined answer and its quantifiable properties are not dependent on the researcher (Neuman, 2006). Within the positivist epistemology, the researcher is considered to be objective and unengaged from the study subject such that the data collection and analysis is detachable from the researcher (Blumberg, Cooper & Schindler, 2014). In contrast, interpretivists argue *"…statistical patterns or correlations are not understandable on their own. It is necessary to find out what meaning people give to the actions that lead such patterns...*" (Blaikie, 2010, p.115). Interpretivism is associated with qualitative methods and is subjective as it respects differences between people by looking at, understanding or interpreting beliefs, motives and reasons (Williams, 2000). This study's epistemology is guided by positivism in that hypotheses formulated in the literature are tested to identify the board characteristics of UK companies that have an impact on financial performance. In essence, the positivist philosophical stance predominates in science with the assumption that science quantitatively measures independent truths about a single perceivable reality. That is, the data and its analysis are purely objective and data does not change because it is being observed (Healy & Perry, 2000).

A criticism of the positivism philosophy is its implication that observations can be made in a way that is not influenced by existing theories and social science scholars argue that positivism does not confront ethical responsibilities deemed inherent in social sciences (Clarke, 2009). In line with this, researchers in other paradigms, such as interpretivism and social constructionism, criticise positivists for separating themselves from the world they study, however Healy and Perry (2000) argue that this is irrelevant to quantitative research methods. Other critics of positivists contend that one of the greatest mistakes a positivist can make is to use available data for other purposes than its original intention, or to assume that only research topics with available data are worthy of study. A famous scientific philosopher named Karl Popper simply states that although scientific theories and methods are never entirely justifiable or verifiable, they are however testable (Popper, 2002). Furthermore, Schweizer (1998) states that methodologies underpinned by the positivist epistemology should be that the method's validity testing ensures that any researcher who applies the same method to the same sample set would come to similar findings. Various scholars have attempted to merge the views of interpretivism and positivism whist other scholars maintain that the two philosophies have such great differences that they cannot be reconciled (Goldkuhl, 2012). Gray and Milne (2015) propose that rather than debating about which is the better philosophy or method, a more vital question for researchers to consider is which method(s) or philosophy best suits the study's research objectives? In a similar vein, earlier research by Morgan (1983, p.397) recognised that *"…interpretative social science certainly offers a brand of insight that positivism cannot achieve, but on the other hand, positivism can also generate forms of knowledge that elude the interpretative approach…*". Zattoni et al. (2013) called for governance scholars to explore corporate governance research using different methods, either quantitative, qualitative or both, to obtain a richer understanding of the phenomena under investigation. The presupposition of the existence of a causal relationship between board variables and firm performance in this study warrants the adoption of a positivist theoretical perspective. This will allow the appropriate methodology, methods of investigation and statistical testing of the hypothesised relationships. Furthermore, the data for this study is gathered from the Bloomberg portal and the FTSE 350 companies' annual reports, which are both

available in the public domain. Therefore, the researcher will remain detached from the sources of the study.

4.3 Research Methodology

Crotty (1998, p.3) refers to methodology as "*…the strategy, plan of action, process or design lying behind the choice and use of particular methods…*". Likewise, the relationship between theory and research determines whether the data collected will either build or test theories (Baker & Foy, 2012). Therefore, in order to meet the needs of this research, quantitative research methods are used in line with the positivism philosophy and deductive research approach. Lawson (2005) proposes that (scientific) knowledge may be obtained by formulating hypotheses as tentative answers to the problem under investigation, then by subjecting this to empirical tests. This is the deductive process where theory is tested through empirical methods in order to confirm or disconfirm theoretical hypotheses (Carey, 2011). Deduction is a form of inference that intends to be conclusive and for it to be correct the argument must be valid and the reasons must be true (Blumberg et al., 2014). In addition, the deductive approach requires a stronger link between reasons and conclusions than the inductive approach (Blumberg et al., 2014). The inductive approach extracts conclusions out of observations and is linked to theory building and qualitative research (Wilson & Maclean, 2011). Bryman and Bell (2015) state that this approach tends to have little or unclear theoretical significance and observations are never complete. Therefore, although academics contend that the deductive approach tends to be linear and rigid, it better suits the quantitative nature of this study where pre-existing theories are empirically tested.

The choice for either qualitative or quantitative research methods is an epistemological issue that reflects scholars' views on science and knowledge. The philosophical divide between qualitative and quantitative research is most evident when addressing the positioning of the researcher in the study (Bredo, 2009). Quantitative research allows researchers to explore regularities in phenomena, conduct empirical assessments, analyse statistical data and remain independent from the data (Zikmund et al., 2010). In addition, Crowther and Lancaster (2009) state quantitative

research is advantageous because it is objective, provides clear and precise answers, allows hypothesis testing and uses numerical data which can be analysed through statistical techniques. Other scholars argue that quantitative research is limited in that it is rigorous and does not always explain the reason why things happen, whereas qualitative research provides a more in depth and detailed explanation of happenings (Blaikie, 2010). However, this does not invalidate quantitative research methods, as they are the most useful techniques in testing hypotheses and identifying associations according to Robertson and McCloskey (2002). Other critics of quantitative methods state that social scientists often use easily accessible figures in their empirical models without examining adequately any biases in the metrics. This limitation may lead social scientists to make incorrect inferences through biased statistics (Gray & Milne, 2015). Work undertaken by Straub, Boudreau and Gefen, (2004) and by Lee and Hubona (2009) addresses this precaution by providing detailed reviews and guidelines on validity and reliability in quantitative research that establishes the quality and accuracy of the results. Issues on research quality are addressed in a later section of this chapter. As previously mentioned, the predominant approach in corporate governance studies has been the use of quantitative and econometric analysis and a similar approach is adopted in this study.

4.3.1 Sampling Strategy

Kumar (2011) states that the purpose of sampling in quantitative research is to draw inferences about the population from which the sample was selected, therefore it is important to select an unbiased sample that is a good representation of the population. The sample chosen for this study is the member companies of the FTSE 350 index between two periods, namely end of December 2004 to end of December 2014. The FTSE 350 is the largest 350 companies from various industries listed on the London Stock Exchange by market capitalisation. There are various reasons for selecting the FTSE 350 index as the sample for this study. First, the FTSE 350 index covers a significant percentage of the London Stock Exchange market capitalisation making it a good representation of the population of large UK companies (FTSE Group, 2016). Second, the FTSE 350 companies are all subject to the same corporate governance provisions provided by the UK Corporate Governance Code and this allows the study to construct the board index used in this research. A single country is

selected in order to avoid differing legal structures and this is consistent with Zattoni and Van Ees (2012) who suggest that this is beneficial because legal and cultural institutions have a strong impact on governance phenomena and mechanisms. Lastly, this study selects the FTSE 350 member companies as its sample because previous corporate governance research in other countries, such as the USA, has examined large companies listed on indexes, which are comparable to the sample of this research (Erhardt et al., 2003; Harford, Mansi, & Maxwell, 2012; Yermack, 1996). The majority of studies in both the upper echelons and corporate governance fields have been largely based in the USA. Zalewska (2014) observes that many of the previous studies on board composition have also largely focused on the USA in comparison with other countries. Therefore, the choice of sample will contribute to the existing body of literature in the corporate governance arena by focusing on the FTSE 350 companies in the UK. Board diversity and diversity in the workplace has become a growing issue of interest in politics, codes of best practice and society at large in the UK. For instance, the Financial Reporting Council, fairly recently, made changes to the UK Corporate Governance Code that now require listed companies to disclose and publish their diversity policies (Vinnicombe et al., 2015).

The period of study is between the years 2004 and 2014 in order to capture the evolving nature of UK board composition. When this study began, the most recent corporate governance code in the UK was the Corporate Governance Code 2014. As a result, the selected sample period encompasses the evolution of the codes of best practices in the UK, particularly from the Combined Code (2003) to the Corporate Governance Code 2014.[5] According to Zattoni and Van Ees (2012) the analysis of longitudinal data samples is helpful in understanding the dynamics of governance mechanisms as corporate governance issues are in continuous evolution. Previous studies on board composition and performance have used time lags ranging from one to three years for dependent variables with no consensus as to which lag is best (Abdullah, Ismail & Nachum, 2016; Carter et al., 2010; Hitt et al., 2006; Jackling & Johl, 2009). A meta-analysis of women on boards and firm performance, conducted

[5] The researcher is aware that there now later editions of the code, namely the UK Corporate Governance Code 2016 and 2018. However, at the time when the research commenced and data was collected the most recent code was the UK Corporate Governance Code 2014.

by Post and Byron (2015) found studies with effect sizes derived from firm performance were more positive for studies that used lags versus those that had no lags. Weir and Laing (2000) use a one-year time lag for their study and suggest that the lag between the change in governance structure of a firm and the effect on firm performance is particularly longer for accounting performance measures. Similarly, earlier research by Daily and Johnson (1997) confirmed that board composition was associated with financial performance two years later. Therefore, although the sample period for this study covers ten years, data for the independent variables is collected for the years 2004, 2006, 2008, 2010 and 2012. The performance measures and control variables are collected for the years, 2006, 2008, 2010, 2012 and 2014. This is in order to analyse differences over longer periods and to incorporate a two-year lag between the dependent and independent variables, as their effects will not likely be immediate (Daily & Johnson, 1997; Hitt et al., 2006).

Initially the sample consisted of all companies that were listed on the FTSE 350 index at any point during the sample period. The screening process required companies to meet the following criteria:

- ✓ The company had to be listed on the FTSE 350 index for a minimum of five consecutive years during the sample period.
- ✓ The company had to have data reported on the Bloomberg database or in publicly available annual reports.

Historical data on the FTSE 350 index company listings was gathered from the Bloomberg portal and the London Stock Exchange. Appendix A provides a full list of the screening process, including the companies that were included and excluded in the sample, and Table 4.2 provides a summary of the screening process.

Table 4.2 Overview of Sample Screening

Criteria	No. of Companies
Initial sample	**637**
Exclude companies delisted from FTSE over sample period	**-413**
Companies consistently listed on the FTSE 350 for a minimum of five consecutive years between 2004 - 2014 [6]	**224**
Exclude equity investment instruments	**-22**
Exclude companies with no data reported on Bloomberg or available annual reports	**-4**
Final sample	**198**

A total of 224 companies met the first criteria and were listed on the FTSE 350 index for five consecutive years during the sample period. Companies listed as equity investment instruments were removed from the sample as their data is not available and thus did not meet the second criteria. This brought the final sample for this study to a total of 198 companies, of which 78 of the firms in the sample are listed on the FTSE 100. A noticeable change in the screening process was that many companies that were excluded from the sample either were delisted from the index in 2008 or only became listed in 2010 after the financial crisis of 2007/8. A total of 41 firms in the final sample were not listed on the FTSE 350 index in the year 2004 and this year has the lowest representation of the sample and makes the dataset an unbalanced panel. Moreover, the inclusion of companies that have been consistently listed on the FTSE 350 creates survivorship bias, however, it also allows the researcher to observe changes in board diversity for different firms over time. Overall, the sample is a good representation of the population of the largest 350 companies in the UK in each given year.

[6] This criterion was selected to ensure the companies that were included were listed on the FTSE 350 in the majority of the sample period, where they would all be liable to adhere to similar codes of best practices and regulatory requirements.

Previous studies on corporate governance and performance have excluded financial firms from their sample for various reasons. The main reasons behind this exclusion have been that financial firms are heavily regulated; therefore, their corporate governance systems and corporate performance may be affected differently to other industries (Cheng, 2008; Weir, Laing & McKnight, 2002). In the first part of the analysis, this study includes financial firms because doing so increases the sample size, which may lead to better results. The study also controls for variations in sectors and industries in the statistical software package used for the analysis. In the second part of the analysis, this study groups the firms into industry sectors and analyses the data as an industry comparison of 16 industry sectors as classified by the Standard Industrial Classification (SIC) codes. Hiebl (2013) notes that contradictory results on certain upper echelons characteristics may be attributable to different industries as one size or structure may not fit all. For instance, Naranjo-Gil and Hartmann (2007) found a positive relationship between CEOs' education and financial measurement systems whilst Burkert and Lueg (2013) did not find any significant relationship. However, Naranjo-Gil and Hartmann (2007) studied public hospitals whilst Burkert and Lueg (2013) studied large listed companies. The London Stock Exchange categorises companies into 41 different industries, however there are some industries into which none of the FTSE 350 companies fall and other industries that only have one or two companies under them. Therefore, the sample is broken down by industry according to SIC codes, which classify companies in industry sectors according to the economic activities that the companies are engaged in. Table 4.3 displays how the sample set is broken down into 16 industries over the sample period.

Table 4.3 Industry Breakdown of Sample Set

Industry	2004	2006	2008	2010	2012	TOTAL
Accommodation, Food & Beverages Services	8	10	10	10	10	48
Banking	7	7	7	7	7	35
Business Support, Leasing, Employment, Public Administration Activities	6	12	12	12	12	54
Construction and Development of Buildings	17	20	20	20	20	97
Electricity, Gas, Water collection & Sewerage	4	5	5	5	5	24
Extraction of Crude Petroleum & Natural Gas	5	9	9	9	9	41
Financial Services, Auxiliary Services to Finance & Real Estate Activities	13	20	20	20	20	93
Insurance	6	8	8	8	8	38
IT, Media, Broadcasting & Publishing	6	8	8	8	8	38
Management Consultancy, Head Offices Activities, Architectural & Engineering Services	12	15	15	15	15	72
Manufacturing	32	36	36	36	36	176
Mining & Quarrying	7	7	7	7	7	35
Retail Sales, Gaming & Betting activities	12	15	15	15	15	72
Telecommunications	6	7	7	7	7	34
Transport	8	9	9	9	9	44
Wholesale Trade	8	10	10	10	10	48
TOTAL[7]	157	198	198	198	198	**949**

[7] This represents the total number of companies in the sample for each given year over the sample period. The year 2004 had the lowest representation of the sample compared to other years.

Table 4.3 displays a slight change in sample size in some industries and most changes in size occur between the years 2004 and 2006 where there is an increase in size. The most considerable change is seen in the financial services, auxiliary services to finance and real estate activities industry sector which had 13 companies in 2004 and 20 companies in 2006 onwards. Industry sectors with closely linked SIC codes and similar economic activities are merged together and this is displayed in Appendix B. The industries with the most companies in this sample set are the manufacturing, financial service and construction industry sectors. Overall, this study will have 949 firm year observations comprised of 16 industries over a 10-year period. Research conducted by Carpenter et al. (2004) observed it is important to examine the environment at the industry level because complex environments may require heterogeneous boards whilst homogenous boards may be more effective in stable industries and environments. Therefore, this study controls for industry dynamism which is further discussed in the next sections.

4.3.2 Data Collection

Data collection is a vital part of the research process as the validity, reliability and accuracy of data can be impacted by the sources of information from which it is gathered. Data can be categorised into either primary data or secondary data. Cooper and Schindler (2008) broadly describe primary data as raw or original data gathered for a specific study by the researcher, whilst Baker and Foy (2012) describe secondary data as data that has been previously collected by other researchers or organisations. Hox and Boieje, (2005) note that some research questions can be answered by using data previously collected by other scholars or for purposes other than research, such as companies' annual reports and official statistics. Furthermore, Bryman and Bell (2015) summarise the advantages of secondary data collection as being less costly, less time consuming, data from official channels may be of a better quality and secondary research allows for the construction of longitudinal and trend analysis studies. However, secondary data must be used with caution as Kumar (2011) states that problems may occur with the availability, format and quality of this data. Researchers are required to locate data sources that meet the specific needs of their research, and when using secondary research, the relevant data may not always be

available (Kumar, 2011). Likewise, it is important to evaluate the quality of secondary data and this is less of a problem with official sources of data according to Oakshott (2009). This study uses secondary data collected from different sources and this is shown in Table 4.4.

Table 4.4 Data Sources

Variable	Information Source	Type of Data
Return on Assets	Bloomberg database	*Financial*
Return on Equity	Bloomberg database	*Financial*
Tobin's Q	Bloomberg database	*Financial*
Age	Annual reports	*Governance*
Gender	Bloomberg database	*Governance*
Education	Annual reports	*Governance*
Experience	Annual reports	*Governance*
Multiple directorships	Bloomberg database	*Governance*
Board Index	Annual reports Bloomberg database	*Governance*

Table 4.4 shows that the data required for this study is available in the public domain and will therefore be collected from both the Bloomberg database and companies' annual reports. Bloomberg is a credible and professional source of information, which provides the benefit of reduced human errors and reliability. The literature reviewed in Chapter 3 shows that data was needed to provide proxies for a number of the board characteristics including age, education and experience. Therefore, although this data

is manually collected from companies' annual reports, the researcher used different techniques and calculations to provide proxies for these variables, which is discussed in more detail in the next section.

4.4 Measurement of Variables

This section presents the definitions of the dependent, independent and control variables used in this research. The discussion will focus on how each of these variables are measured in this study, identify any differences from previous studies and discuss the construction of the corporate governance board index. Table 4.5 displays a summary of the variables and their measurements for this study.

Table 4.5 Summary of Variables and Measurements

Dependent Variables	Measurement	References
Return on Assets	$(EBIT-tax)/average\ total\ assets$	Kamardin (2014) Masulis, Wang & Xie (2012)
Return on Equity	$net\ income/total\ equity$	Khanna, Jones & Boivie (2014) Lückerath-Rovers (2013)
Tobin's Q	$MVE + L / TDebt + NetS / TDebtTotal\ Assets$	Bhagat & Bolton (2013) Francis, Hasan & Wu (2015)
Independent Variables	**Measurement**	**References**
Age	**Blau's Index**	Ali, Ng & Kulik (2014) Boehm, Kunze & Bruch (2014)
Gender	**Proportion of female directors on the board (%)**	Liao, Luo & Tang (2015) Mahadeo, Soobaroyen & Hanuman (2012)
Education	**Four-point scale reflecting the highest level of education attained** **Blau's Index**	Mahadeo, Soobaroyen & Hanuman (2012) Nielsen & Nielsen (2013)
Experience	**Four-point scale reflecting the highest previous position held** **Blau's Index**	Mahadeo, Soobaroyen & Hanuman (2012) Nielsen & Nielsen (2013)
Multiple Directorships	**Average number of directorships held by each director**	Gray & Nowland (2013) Khanna, Jones & Boivie (2014)
Corporate Governance Board Index	**Aggregate score from Index** (see Section 4.4.2)	Bozec & Bozec (2012) Bhagat, Bolton & Romano (2008)
Control Variables	**Measurement**	**References**
Firm Age	**Number of years from date of incorporation**	Jackling & Johl (2009) Musteen, Datta & Kemmerer (2010)
Firm leverage	**Percentage of long term debt to total capital**	Jackling & Johl (2009) Erkens, Hung & Matos (2012)
Firm size	**Logarithm of total assets**	Nielsen & Nielsen (2013) Musteen, Datta & Kemmerer (2010)
Industry Dynamism	**Standard error of the slope coefficient divided by mean value of sales**	Farjoun & Levin (2011) Zhang, Garrett-Jones & Szeto (2013)

4.4.1 Dependent Variables

Firm performance can be measured in terms of financial performance and non-financial performance; however, prior studies reviewed in Chapter 2 display that financial performance is a better indicator of how a firm is maximising shareholders' wealth. Tobin's Q is selected as the primary measure of financial performance in this study because it is the conventional proxy of firm performance in both corporate finance and corporate governance research (De Andres & Vallelado, 2008; Yang & Zhao, 2014; Yermack, 1996). Futher to this, Nahar-Abdullah (2004) recommends the use of more than one performance measure in order to incorporate a wider range of performance issues. Consequently, this study also employs the return on assets (ROA) and return on equity (ROE) as alternative measures of financial performance. These three measures of financial performance are adopted for four reasons. First, Ntim (2015) states that there is no agreement amongst existing corporate governance studies as to which is the best measurement of financial performance. Consequently, employing three different proxies of financial performance allows for robustness when checking the findings (Terjesen et al., 2016).

Second, the theory developed in this study proposes that greater demographic diversity in the board of directors should improve the board's ability to monitor and provide advice to executives. This in turn improves financial performance and Khanna et al. (2014) suggest that this improved financial performance is better represented in accounting based measures such as ROA and ROE. This is because accounting based measures indicate the effectiveness of the governance of a firm whilst market based measures are based on investors' perceptions (Khanna et al., 2014). Third, Haniffa and Hudaib (2006) examine the relationship between board leadership and firm performance and find that CEO duality is not significantly related to Tobin's Q but has a significant negative relationship with ROA. Therefore, they conclude that the relationship between board structure and firm performance may be dependent on the type of measurement used for firm performance. Fourth, these financial performance measures are consistent with those used in previous corporate governance research (Adams & Ferreira, 2009; Erhardt et al., 2003; Hillman et al., 2007; Mahadeo et al., 2012; Rodriguez-Fernandez, Fernandez-Alonso & Rodriguez-Rodriguez, 2014). For these reasons, this study uses measures of both accounting based performance and

market based performance in order to see whether there are different effects in the relationships between board diversity and ROA, ROE and Tobin's Q.

Tobin's Q

Tobin's Q is a market-based performance measure that was originally formulated by Tobin (1969) and is defined as the ratio of the market value of a company to the replacement cost of its assets (Chung & Pruitt, 1994). The criterion of Tobin's Q is based on the comparison of a firm's value in financial markets and its book value or capital stock (Holmes & Maghrebi, 2015). The forward-looking measure, Tobin's Q is typically calculated as follows:

$$Tobin's\ Q = MVE + L / TDebt + NetS / TDebt Total\ Assets$$

Where:

MVE *(the market value estimate) = the product of a firm's share price and the common stock outstanding*

L/TDebt *= the book value of long term liabilities*

NetS/TDebt *= the book value of current liabilities less current assets*

The numerator of Tobin's Q equation partly reflects the value assigned by investors to a firm's intangible assets; however, Demsetz and Villalonga (2001) argue that the denominator excludes the firm's investments in intangible assets that are normally treated as expenses. Furthermore, Reddy, Locke and Scrimgeour (2010) state that this exclusion distorts the comparison of performance of firms that have differing degrees of intangible capital and this can be resolved by using depreciated book values of tangible assets. Theoretically, higher values of Q should encourage more investment because the relative cost of increasing capital stock through issuing new equity is reduced (Hansen & Seo, 2002). Earlier work done by Lang and Stulz (1994) suggests that the 'Q measure' is a better performance measure when comparing firms or industries because it does not require risk adjustment or normalisation.

Accounting scientists tend to prefer the use of measures such as Tobin's Q over traditional accounting ratios and simple market valuations (Chahal & Kumari, 2013). Unlike ROA and ROE, Tobin's Q reflects the long-term value of the firm, and it has to do with market perceptions about the value of corporate governance within the firm (Siddiqui, 2014). As a result, scholars argue Tobin's Q is beneficial in that it takes into account both asset value and market value (Chahal & Kumari, 2013). In addition, Holmes and Maghrebi (2015) state that the q theory is particularly important in explaining economic fluctuations as it provides a vital linkage between the real and financial sectors. Earlier research has highlighted the difficulty in the calculation of 'Q values' due to its complexity and costly data requirements, this study however, will avoid these issues by utilising the Bloomberg portal to get standardised data for all the FTSE 350 companies.

Return on Assets

Return on assets is a short term accounting based indicator of performance that is commonly accepted as a 'yardstick' for measuring business success (Brealey, Myers & Allen, 2014). Return on assets looks at the ratio of income to total assets and is expressed as follows:

$$return\ on\ assets = (EBIT{-}tax)/average\ total\ assets$$

Where:

EBIT *= earnings before interest and tax*

Average total assets *= the sum of total assets at the beginning and at the end of the financial year divided by two*

The calculations for ROA are normally based on the assumptions that net income includes extraordinary items and adjustments for changes in accounting principles; and the average total assets are the beginning and end of year assets divided by two. ROA is beneficial in that it measures how successful a company is in generating earnings independent of the financing of the assets (Azhar & Afandi, 2003). Some

limitations of this ratio are that it relies on financial information that can be manipulated by managers and it may be difficult to compare values across firms due to different depreciation methods and inflation of book values (Dragomir, 2010). Other critics state ROA is backward looking and only partially estimates future events in the form of depreciation and amortisation (Reddy et al., 2010). Although some critics argue that accounting-based performance measures can be manipulated by managers, agency theory argues that independent non-executive directors should improve transparency and disclosures of financial information through monitoring management (Clemente & Labat, 2009). In addition, Siddiqui (2014) states that both ROA and ROE reflect a tangible balance sheet effect with the influence of corporate governance already integrated in the accounting values.

Return on Equity

Arnold (2013, p.512) defines return on equity as *"...profit attributable to shareholders as a percentage of equity shareholders' funds..."*. This ratio is expressed as follows:

return on equity = net income/total equity

Where:

***Net income** = fiscal year's net income before ordinary share dividends*

***Total equity** = ordinary share capital plus reserves*

Net income is calculated as the fiscal year's net income before ordinary share dividends and the total equity is ordinary share capital plus reserves (Atrill, 2009). This technique is a popular measure of corporate performance and Monteiro (2006) argues that ROE is one of the most important ratios that investors and shareholders should consider. In a similar vein, Khanna et al. (2014) suggest that ROE is an appropriate measure in corporate governance studies because it not only reflects the operating efficiency of a firm, but it also reflects the firm's financial choices. Therefore, a performance measure that incorporates both operating efficiency and financing is useful given that boards are concerned with total firm performance. ROE

also has the benefit of linking asset turnover, financial leverage and profitability and it represents the end result of structured financial ratio analysis or the DuPont system (Brealey et al., 2014). Research by Frezatti (2007) posits that ROE allows for comparisons which are harder to make with other measures of return and it allows for a useful approximation of the return potential created in a limited time period, thus making it a popular indicator of return to shareholders. The major limitations of ROE are that it uses accounting income which can be manipulated with changes in accounting policies and it does not take into account the cost of its own capital (De Wet & Du Toit, 2007). In line with this, Khanna et al. (2014) propose that ROE may be viewed as a biased measure of total firm performance because two companies with the same net income may have different ROEs based on their level of debt. Therefore, this study controls for the level of firm debt by incorporating firm leverage as a control variable in the analysis models. In addition, the regression models are run using the other dependent variables to ensure robustness and allow comparability.

There is a considerable debate in the literature concerning the association between corporate governance and measures of firm performance. For instance, Gompers et al. (2003) argue that investors may not always understand the implications of corporate governance on a company's market value. Consequently, Core, Guay and Rusticus (2006) suggest that measures such as ROA are more suited for examining the relationship between corporate governance and performance. This study contributes to this debate by using both accounting and market based measures of performance and observing any differences or similarities in the governance-performance relationship. In addition, using all three performance measures in this study limits criticisms of ROA and ROE being 'backward looking' and Tobin's Q as being 'forward looking' by providing a more holistic view of the companies' financial performance (Reddy et al., 2010).

4.4.2 Independent Variables

Table 4.5 presented the independent variables for this study, which are age, gender, education, experience, multiple directorships and the corporate governance board index. This section presents the definitions and measurements of these variables

together with a comparison of their measurements in previous studies. Appendix C shows the variations and similarities between measurements of these variables in previous studies and this study. The first section discusses Blau's Index (1977) which is used to measure three of the independent variables for this study.

Blau's Index

Scholars suggest that measures of dispersion of a group over specified categories rather than central tendencies are more vital in analysing the effects of demography on organisational performance (Nielsen, 2010). Researchers quantify the diversity of groups or teams in several ways, however Blau's (1977) index of heterogeneity has been extensively used and is accepted as the norm by scholars in upper echelons and top team management research to measure categorical variables (Ferrero-Ferrero et al., 2015; Naranjo-Gil, 2009; Oba & Fodio, 2013). Blau's index was previously known as Hirschman's (1964) index, but was however originally proposed by Simpson (1949, quoted in Harrison & Klein, 2007) as a measure the diversity of species in ecosystems. Research by Harrison and Klein (2007) identified different types of diversity: diversity as separation, disparity and variety. Blau originally termed the variety form of diversity as heterogeneity, however other scholars have termed this as categorical variability and information diversity (Blau, 1977; Harrison and Klein, 2007; Jehn, Northcraft & Neale, 1999). Blau's Index is a suitable measure for categorical variables, particularly because categorical variables are not amenable to the coefficient of variation measure (Naranjo-Gil, 2009). This index is calculated as follows:

$$1 - \sum p \frac{2}{i}$$

In this equation *p* is the proportion of team members in a given category whilst *i* is the number of various categories of the feature across all groups (Naranjo-Gil & Hartmann, 2007). The values of the Blau Index range from zero to one. A score of zero indicates perfect homogeneity or no diversity. Higher scores on this index indicate higher diversity of a certain feature between group members. The maximum Blau Index for a feature in a particular data set is determined by the number of categories of that feature in the data set and is calculated as: *(n-1)/n* where n is the total

number of categories (Haas & Nuesch, 2012). Therefore, according to Blau's index, the higher the number of categories in a variable and the more equally the attributes are distributed across the various categories, the lower the sum of proportions and consequently the larger the Blau index value (Ararat et al., 2015). Harrison and Klein (2007) suggest that Blau's index as a measure of diversity has desirable mathematical properties and has a tidy range of values from zero to one. Harrison and Klein (2007) further suggest that the choice of diversity measure in research should be determined by the theoretical specification of the type of diversity. Therefore, because this study has specified diversity as variety, Blau's index is a suitable measure for the diversity of applicable variables.

Age

Shore at al. (2009) state that research on age diversity is much less developed than research on race and gender, suggesting that the potential effects of age diversity on performance have not yet been fully established. Prior findings on the relationship between age diversity and corporate performance are inconsistent. Mudambi and Treichel (2005) measure age as the average age of senior management in years and find no association between top managers' age and performance of new ventures. In contrast, Mahadeo et al. (2012) measure age diversity using a Likert scale of different age bands and find a positive relationship between age diversity and performance. Harrison and Klein (2007) suggest that there should be an appropriate operationalisation to each type and measure of diversity. As a result of this, Ferrero-Ferrero, Fernández-Izquierdo and Muñoz-Torres (2012) and Ferrero-Ferrero et al. (2015) empirically examine measures of age diversity and propose that generational diversity in firms can be categorised as diversity as variety. Furthermore, Ferrero-Ferrero et al. (2012) use Blau's index to measure age diversity and find a significant positive relationship between age diversity and firm performance. In line with this and the literature reviewed in Chapter 3, this study will use Blau's Index (Blau, 1977) to measure age diversity in companies by means of four categories based on generations. These categories are: the Greatest Generation (ages 71-87), Boomers (ages 52-70), Generation X (ages 33-51) and Generation Y (ages $\leq$ 32). These categories fall in line with the general consensus amongst scholars about the four major generations of the

20th century (Ferrero-Ferrero et al., 2015; Sullivan et al., 2009; Twenge et al., 2010). Blau's Index (Blau, 1977) is calculated by the following equation, where i is a particular generation and pi is the proportion of directors of a particular generation within the board.

$$\text{Diversity} = 1 - \sum p \frac{2}{i}$$

By using Blau's Index for diversity, age is a continuous variable and in this study's sample Blau's index of age diversity varies between 0.00 and 0.75.

Gender

A report by the European Commission (2012a) observes that women contribute significantly to a board through greater innovation, productivity and improved company performance. Furthermore, Konrad et al. (2008) assert that there should be more than one female director on a board before female members can exert a positive influence on performance. However, previous findings on gender diversity have produced mixed results and remain inconclusive. Farrell and Hersch (2005) find that women are more likely to serve on better performing boards but did not find any significant direct links between gender diversity and performance. Mahadeo et al. (2012) did however find a strong positive relationship between gender diversity and firm performance. Similar to the studies by Farrell and Hersch (2005) and Mahadeo et al. (2012), this study measures gender as an estimated proportion of board size at the year-end and as a percentage. This will reflect the extent of female director appointments and the extent of gender diversity on the board.

Education

Historically, compensation and salaries of employees and managers have been strongly linked to the education and experience they possess. Organisations have also heavily invested in different training courses designed to build and improve human capital and performance (Combs et al., 2006). Therefore, researchers have long understood that human capital, especially one's education and training, plays a vital role in organisational performance (Crook et al., 2011). Previous studies have used

different measures for education. For instance, Pavlatos (2012) measures educational background as the ratio of the years of business-oriented education to the total number of education years. Lee and Tsang (2001) measure the level of education in years whilst Nielsen and Nielsen (2013) use Blau's index to measure educational diversity. The hypotheses for directors' education developed in Chapter 3 are in two parts, the first part seeks to link directors' education levels with performance and the second part links educational diversity with performance. Therefore, the measurement of directors' education in this study is in two parts. First, to assess the directors' education levels, a four-point scale that reflects the highest level of education attained is used. This scale is similar to the one used by Mahadeo et al. (2012) and Barker and Mueller (2002), and is coded in bands ranging from zero to three as follows:

0 = *No college degree*

1 = *Undergraduate degree*

2 = *Master's degree*

3 = *PhD degree*

Although simply counting the number of education bands present in a board can reflect education diversity, a more robust measure is to use Blau's Index for diversity. Therefore, educational diversity is measured as the Blau index of directors' current educational backgrounds using the formula below:

$$\text{Diversity} = 1 - \sum p \frac{2}{i}$$

In this formula, i is a particular education band and pi is the proportion of directors of a particular education level within the board. In this study's sample, Blau's index of educational diversity varies between 0.00 and 0.75.

Experience

Carpenter et al. (2004) recognise that the expertise and skills of directors can be reflected through their previous experience. Thorsell and Isaksson (2014) note that previous research has produced mixed findings on the influence of directors'

experience on firm performance due to issues of measurability and a shortage of available data. Kroll et al. (2008) define director experience as the number of years a director has been a manager or board member of a firm within the same industry, whereas Certo et al. (2001) define director experience as the number of cross directorships a board member has held. Other scholars such as Kang et al. (2007) and Bodnaruk et al. (2008) use age as a proxy for director experience, whilst, Gray and Nowland (2013) argue that prior experience as a director is the most relevant experience that directors can possess. The literature reviewed in Chapter 3 suggests that the previous appointments of directors are a suitable proxy for directors' experience in this study and this is similar to studies conducted by Fich (2005) and Gray and Nowland (2013). In addition, the hypotheses developed for directors' experience are in two parts, the first part links director experience to financial performance whilst the second part links the experience diversity of directors to financial performance. In order to assess the experience of directors, the four-point scale system used by Mahadeo et al. (2012) is adapted to reflect the highest previous position held by a director. The four-point scale is coded in bands ranging from zero to three as follows:

0 = *no previous appointments held*

1 = *previous appointment held in a core functional background*

2 = *previous appointment at a senior managerial level*

3 = *previous appointment as a director* [8] *or CEO*

The core functional backgrounds for the second band have been identified in the literature as finance or accounting, production or operations, administration, marketing or sales, engineering or research and development and legal functions (Hillman & Dalziel, 2003). In order to assess the diversity of experience of directors on the board, the Blau's Index for diversity is used. In the formula below, i is a certain

[8] This directorship may either be in an executive or non-executive capacity as Kor and Sundaramurthy (2008) assert that directors' repertoire of knowledge and skills is primarily derived from prior professional experience as a director. Therefore, this experience should apply to both executive and non-executive roles.

experience band and pi is the proportion of directors of a particular experience band within the board.

$$\text{Diversity} = 1 - \sum p \frac{2}{i}$$

By using Blau's Index for diversity, experience is also a continuous variable with its values ranging between zero and one. In this study's sample Blau's index of experience diversity varies between 0.00 and 0.75.

Multiple Directorships

Despite the theoretical contributions that have been made by scholars, there is still an ongoing debate about the benefits and limitations of multiple directorships as previous studies have produced inconsistent findings (Drago et al., 2015; Renneboog & Zhao, 2014). In addition, a variety of different measures of multiple directorships have been used in previous literature. For instance, Fich and Shivdasani (2006) measure multiple directorships as the percentage of directors on the board holding two or more outside directorships and find a negative association between multiple directorships return on sales. Kor and Sundaramurthy (2008) measure multiple directorships as the total number of board ties of outside directors of a firm during a particular year and find a strong association with firm growth. Other studies measure multiple directorships as the average number of directorships held by each director (Ferris et al., 2003; Gray & Nowland, 2013; Khanna et al., 2014). Likewise, Hillman et al.'s (2009) study notes that directors' networks can be measured by the number of other directorships they hold on other boards. Therefore, this study simply measures outside directorships as the average number of directorships held by each director. This is calculated as the total number of other directorships held divided by the total number of directors on the board as reported in the annual reports.

Board Index

Scholars have debated in governance literature on the best methods of empirically measuring the quality of corporate governance of a company. Da Silva and Leal (2005) further suggest when analysing the relationship between corporate governance and performance, a corporate governance board index is more suitable than looking at a single control mechanism. Other scholars suggest that only specific board characteristics or variables are critical determinants of corporate governance (Bhagat et al., 2008). Although there is no one best measure of corporate governance, the use of corporate governance indices has become the most dominant approach in evaluating the quality of a company's corporate governance (Bhagat et al., 2008; Bozec & Bozec, 2012; Da Silva & Leal, 2005; Korent, Dundek & Calopa, 2014). Previous governance studies have either used self-constructed corporate governance indices or ones generated by commercial firms (Carvalhal & Nobili, 2011; Epps & Cereola, 2008; Gompers et al., 2003). Corporate governance indices may be constructed either through information gathered from commercial service providers, data hand collected from publicly available information, questionnaires sent to companies or from commercial ratings.

Bozec and Bozec (2012) state that survey based indices may produce biased results as companies that do not respond may be those with poor governance and those that do respond may have glorified the quality of their governance. Over recent years, commercial providers of governance services and financial economists have constructed measures of corporate governance that collapse into a single number. Zheka (2006) suggests that weightings used in commercial governance ratings tend to be significantly influenced by subjective views of analysts based on their knowledge and experience of companies. In addition, commercial governance ratings do not always take into account country differences and firms' specific circumstances (Bhagat et al., 2008). On the other hand, Bozec and Bozec (2012) propose that self-constructed indices by researchers have the ability to select governance provisions that are relevant to the study's sample. Furthermore, academic indices use equally weighted values for each provision on their index in order to note the absence or presence of a practice and this makes academic indices less subjective than

commercial ratings (Bozec & Bozec, 2012). There is still, however, a debate amongst researchers as to whether corporate governance indices should be weighted or not.

Bhagat et al. (2008) state that the weights assigned to an index are critical in the eyes of investors as when an index's weight is not consistent with those used in the market, incorrect inferences will be drawn. In addition, other scholars argue that unweighted indices may provide an inaccurate measure of the quality of a firm's governance. This is because all governance features are weighed equally although some features are stronger predictors of governance quality than others and the stronger predictors should be given higher weights (Chen et al., 2007). In contrast, Bozec and Bozec (2012) argue that commercial ratings are significantly impacted by the analysts' subjective views and this may also result in incorrect inferences if the weighting scales are not consistent with those in the market. Therefore, a more conservative approach is to use indices with equally weighted governance provisions. Bhagat et al. (2008) believe that self-constructed equally weighted indices provide a better measure of corporate governance under the canons of scholarly research.

Bozec and Bozec (2012) identified several limitations of corporate governance indices which, if not dealt with, may potentially increase certain empirical problems related to measurement and endogeneity. First, indices comprised of different provisions provide a greater risk of measurement errors that may result in an incorrect specification of the statistical analysis of the governance-performance relationship. Second, governance indices that assign equal positive weights to all the provisions in the index treat good governance attributes as complements rather than substitutes. This notion is underpinned by the idea that not all governance components are critical, only a subset of provisions in the index determine the results (Bebchuck, Cohen & Ferrell, 2009; Brown & Caylor 2006). However, there is no agreement as to which governance provisions are most important in the index (Carvalhal & Nobili, 2011; Chen et al., 2007). The process of selecting governance provisions in self-constructed indices may be tinted with subjectivity, therefore Bozec, Dia and Bozec (2010) propose that testing the validity of the index can help to signal the reliability and robustness of the index. Lastly, indices with multiple provisions may increase the problem of endogeneity and

the risk of spurious correlation; however, this can be overcome by using fixed effects methodologies (Bozec & Bozec, 2012).

In this study, the researcher constructs a board index that goes beyond the measurement of conventional governance variables and structural diversity measures, such as board size and board independence (Connelly, Limpaphayom & Nagarajan, 2012). This is in order to assess and measure the actual quality of corporate governance practices of the boards of listed companies in the UK. In addition, this study's board index is tailored to FTSE 350 companies and reflects different attributes considered as good corporate governance practice by the Financial Reporting Council in the UK. The board index specifically addresses various aspects of boards of directors such as board structure, board effectiveness and board accountability. This is consistent with the OECD principles that acknowledge corporate governance frameworks within companies should maintain strategic decision-making and guidance, effective monitoring of management and accountability to shareholders (OECD, 2015).

This study's index is not survey based and all the questions are answered from publicly available information disclosed by the companies to ensure objectivity, standardisation and comparability of the index. The board index is composed of 34 questions developed from the five main principles of the UK Corporate Governance Code 2014, which are leadership, effectiveness, accountability, remuneration and relations with shareholders. The questions in the board index were set at 34 so that the index is neither too small nor too large but sufficient to capture the multivariate nature of corporate governance (Da Silva & Leal, 2005). Likewise, the board index takes into account various aspects of corporate governance as opposed to a single attribute, in order to form a proxy measure that evaluates a firm's governance structure as a whole. The board index has no weighting amongst questions and the index score is calculated as the total sum of the points for each question. To test the reliability of the index, the Cronbach's alpha test was used, as it is one of the most widely used objective measures of reliability in the literature (Tavakol & Dennick, 2011). Cronbach alpha is a measure of internal consistency of a test, index or scale and has a value that ranges between 0 and 1. A value of 0.70 or higher is considered acceptable in most social science

research as lower values could indicate either an insufficient number of questions or poor inter-relatedness between the constructs (Tavakol & Dennick, 2011). The results of the Cronbach alpha test for the board index are presented in Table 4.6.

Table 4.6 Cronbach's Alpha Test Results

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.762	.838	33

The alpha coefficient for the 33 items in the board index is 0.762, suggesting that the items have an acceptable internal consistency and the board index is reliable. In addition, an appropriate methodology is employed in the data analysis to address the increased risk of endogeneity and this is discussed further in Section 4.5.

Questions in the board index are based on the principles and guidance provided by the UK Corporate Governance Code 2014 for several reasons. First, all the companies in the chosen sample are listed on the London Stock Exchange and are subject to the provisions set out by the code. Second, Black et al. (2012) note that good corporate governance is often local and varies from country to country, therefore a suitable measure of corporate governance for this research would be one that is tailored and country-specific to UK firms. Finally, Black et al. (2014) posit that there is a fundamental and unobserved concept of overall corporate governance which is composed of board structure, board procedure, disclosure and shareholder rights. These aspects of corporate governance are deemed to induce the board to act with true effectiveness by increasing firm value and performance (Black et al., 2014). Furthermore, these aspects are well captured in the main principles of the UK Corporate Governance Code 2014 and are rooted in corporate governance theories, finance theories and research findings from prior research (Coles, Daniel & Naveen, 2008; Crook et al., 2011; Hillman & Dalziel, 2003; Nicholson & Kiel, 2007). Appendix D shows the full set of questions in the board index and Table 4.7 shows

the complete scorecard and references used to construct the index over the five sections, which are discussed hereinafter.

Table 4.7 Board Index Scorecard and References

SECTION	SUBJECT AREAS	SCORING	REFERENCES
Section A: Leadership **Questions 1-5**	➢ CEO duality ➢ Disclosure ➢ Senior independent directors	*If the answer is yes give 1 mark and if the answer is no award 0 marks*	Ben-Amar & Zeghal (2011); Clemente & Labat (2009); Nandi & Ghosh (2013); Reeb & Zhao (2013)
Section B: Effectiveness **Questions 6-18**	➢ Board size ➢ Board independence ➢ Meetings attendance ➢ Performance evaluation ➢ Nomination committee	*If the answer is yes give 1 mark and if the answer is no award 0 marks* *NB if attendance at meetings is not disclosed award 0 marks*	Cheng & Courtenay (2006); Darmadi (2013); Ferreira, Ferreira, & Raposo (2011); Lin, Yeh & Yang (2014); Liu, Wang & Wu (2016); Ramachandran et al. (2015)
Section C: Accountability **Questions 19-27**	➢ Directors' responsibilities ➢ Audit committee ➢ Internal control and risk management	*If the answer is yes give 1 mark and if the answer is no award 0 marks* *NB if corporate governance committee is combined with another sub-committee award 1 mark*	Clemente & Labat (2009); Doyle, Ge & McVay (2007); Karamanou & Vafeas (2005); Magrane & Malthus (2010); Mohammad, Wasiuzzaman & Salleh (2016)
Section D: Remuneration **Questions 28-32**	➢ Remuneration committee	*If the answer is yes give 1 mark and if the answer is no award 0 marks*	Ben-Amar & Zeghal (2011); Dell'Atti, Intonti & Iannuzzi (2013); Melis, Gaia & Carta (2015)
Section E: Relations with shareholders **Questions 33-34**	➢ Communication with shareholders	*If the answer is yes give 1 mark and if the answer is no award 0 marks*	Hahn & Lasfer (2011); Zattoni & Cuomo (2010)

A) Leadership

Section A of the index consists of five questions that focus on CEO duality, board meetings and the appointment of a Senior Independent Director. This section of the board index assesses the leadership within the board as the resource dependence theory views the board as an integral part of firm success (Nicholson & Kiel, 2007). In addition, research by Mercer (2004) states that boards of directors serve as an instrument of internal assurance as investors place more confidence in a firm's disclosure when the board is of high quality. The separation of the chairman and chief executive's responsibilities enhances the monitoring function of the board and reduces agency problems according to Clemente and Labat (2009). In a similar vein, Ben-Amar and Zeghal (2011) noted that CEO duality reduces a board's independence, therefore when a chairman is independent on appointment this should also improve the board's effectiveness in monitoring management and transparency. Although the UK Corporate Governance Code (2014) does not specify how frequently board meetings should take place, it does state that *"…the board should meet sufficiently regularly to discharge its duties effectively*" (Financial Reporting Council, 2014, p.7). Finally, this section of the board index assesses whether companies appoint senior independent directors to add to the leadership quality of the board and to serve as an intermediary for non-executive directors and shareholders (Financial Reporting Council, 2014).

B) Effectiveness

Section B looks at the effectiveness of the board by considering board size, board independence and the nomination committee. The UK Corporate Governance Code (2014) requires companies to disclose on the effectiveness of their boards considering areas such as independence, skills, diversity and company knowledge. Cheng and Courtenay (2006) contend that the effectiveness of a board is dependent on its size, independence and composition. Furthermore, the size of a board and its independence are correlated as the larger the board, the higher tends to be the proportion of independent directors on the board (Clemente & Labat, 2009). The UK Corporate Governance Code (2014) states that *"…the board should be of sufficient size that the requirements of the business can be met… and should not be so large as to be*

unwieldy..." (Financial Reporting Council, 2014, p.10). Although, there is not one agreed optimal board size, the general consensus amongst previous studies has been that a good board size should have a maximum of 15 directors and a minimum of six (Ben-Amar & Zeghal, 2011; Coles et al., 2008; Darmadi, 2013). In regards to board independence, the UK Corporate Governance Code 2014 recommends a certain board structure for firms, where at least half of the board should be comprised of independent non-executive directors (NEDs) with the exception of smaller companies.

Solomon (2010) states that the key role of NEDs is to give advice on strategic decisions and to monitor executive directors, and in order for NEDs to effectively play a monitoring role, they need to be independent. In addition, the majority of empirical studies on board independence have concluded that greater board independence is related to improved transparency and effective monitoring (Donnelly & Mulcahy, 2008; Ferreira et al., 2011; Lim et al., 2007). The UK Corporate Governance Code recommends the board of directors to have a nomination committee that is composed of a majority of NEDs (Financial Reporting Council, 2014). The primary role of this committee is to evaluate the balance of skills, knowledge and experience on the board and to advocate a transparent nomination procedure of directors (Mallin, 2013). Although this may not guarantee board effectiveness, studies by Darmadi (2013) and Clemente and Labat (2009) identified that board committees and attendance at meetings are important factors in corporate governance and transparency.

C) Accountability

Section C looks at accountability and focuses particularly on the work of the audit committee and internal control. The two main duties of directors are a duty of care and a duty of trust or fiduciary duty. The duty of care calls for directors to exercise independent judgement with reasonable skills, diligence and care. Whilst the fiduciary duties require directors to act in the best interests of the company, to avoid conflict between their duties and personal interests and to behave with integrity and honesty (Tricker, 2012). Scholars argue that the audit committee is the most important of the board's subcommittees with its main objective being to review the scope and outcome of the audit and ensuring that the auditors' objectivity is maintained (Farber, 2005;

Karamanou & Vafeas, 2005; Magrane & Malthus, 2010). Furthermore, the role of the audit committee has become increasingly significant over the past decade following high profile scandals (Magrane & Malthus, 2010). Research by Darmadi (2013) states that the audit committee helps in alleviating agency problems by ensuring unbiased and transparent financial information is released to shareholders and other stakeholders in a timely manner. The UK Corporate Governance Code requires the audit committee to be comprised of at least three independent NEDs and to have at least one member with recent and relevant financial experience (Financial Reporting Council, 2014).

D) Remuneration

Section D looks at the composition of the remuneration committee and the UK Corporate Governance Code requires the remuneration committee to be comprised of at least three independent NEDs (Financial Reporting Council, 2014). Lavelle (2002, p.108) addressed the issue of directors' remuneration as, *"…the most egregious governance failure of the 20th century..."*. The main role of the remuneration committee is described by Ben-Amar and Zeghal (2011) as aligning managers and shareholders' interests and reducing agency costs by determining directors' remuneration packages in a formal, transparent and well-designed manner. Dell'Atti et al. (2013) argue that there is a positive relationship between financial performance and a high quality remuneration committee because when the committee is efficient agency costs are reduced and it improves incentive alignment. However, the effectiveness of these board committees is dependent on their size, independence, frequency of meetings and expertise of members (Ben-Amar & Zegal, 2011).

E) Relations with Shareholders

Section E looks at the relations of non-executive directors with shareholders. Agency theory perceives NEDs as monitors and advisors of management who work on behalf of shareholders to mitigate agency problems (Hahn & Lasfer, 2011). However, Zattoni and Cuomo (2010) argue that the effectiveness of NEDs as safeguards of shareholders' interests is still an ongoing debate. The UK Corporate

Governance Code 2014 recommends that directors should have satisfactory dialogues with shareholders and the board should ensure NEDs develop an understanding of the views of major shareholders (Financial Reporting Council, 2014).

4.4.3 Control Variables

In addition to the variables discussed above, a number of control variables are included in the regression model to account for other potential influences on firm performance and board characteristics as recognised in the literature (Beck, Demirgüç-Kunt & Maksimovic, 2005; Chenhall & Moers, 2007; Erhardt et al., 2003; Kamardin, 2014). This study controls for several variables to mitigate possible endogeneity problems and omitted variable bias (Black, Jang & Kim, 2006). These variables were chosen based on data availability and are consistent with those used in previous empirical studies in corporate governance research (Bhagat & Bolton, 2008; Vo & Phan, 2013). Lim, Matolcsy and Chow (2007) propose that the impact of corporate governance mechanisms on firm performance differs amongst industry sectors. Therefore, in addition to grouping the sample into industry sectors, this study controls for industry dynamism and year dummies. Firm level variables that are expected to influence either board composition or performance are also controlled for, namely firm size, firm leverage and firm age. Firm ownership structure is not included as a control variable as this data was inaccessible for the researcher in Bloomberg and other sources. In addition, Wang and Shailer (2015) state that the literature on firm ownership and performance is mixed and provides conflicting hypotheses based on different theoretical positions. Board size is also commonly included as a control variable in many corporate governance studies, however in this study, board size has already been incorporated in the board index that was discussed in the previous section. The next sections discuss each of the control variables and how they are measured in this study.

Firm Age

Firm age is considered a vital influence on firm performance and is commonly measured as the number of years from the date of incorporation (Jackling & Johl, 2009). Firm age is expected to have a positive association with reputation, therefore

older firms may benefit from past experience and from having a known or established brand (Musteen et al., 2010). Similarly, Black et al. (2006) argue that older firms would have had more time to enhance their corporate governance systems in response to internal needs and investor pressure. In contrast, Coad, Seggara and Tereul (2013) suggest younger firms have a greater need to improve their corporate governance practices in order to attract capital to optimise their capital structures. Empirical evidence exists to support the notion that good corporate reputation increases a firm's value and is associated with superior financial performance (Musteen et al., 2010; Polonsky et al., 2005; Roberts & Dowling, 2002). Following Jackling and Johl (2009), firm age is measured as the number of years from the date of incorporation.

Firm Leverage

The seminal paper by Jensen and Meckling (1976) recognised that firm leverage has an impact on the agency conflicts between a firm's management and shareholders. The reasoning behind this proposition is that because managers are encouraged to act in the best interests of shareholders, their behaviours and decisions may be altered meaning the amount of leverage in the firm's capital structure will impact firm performance (Brav, Lehavey & Michaely, 2005; El-Sayed Ebaid, 2009; Jensen & Meckling, 1976). In addition, Khan, Kaleem and Nazir (2012) suggest that debt has a key role in reducing the agency costs of free cash flows by preventing the firm from investing in projects with negative net present values. Although empirical evidence regarding the relationship between leverage and firm performance is mixed, prior studies in corporate governance have included firm leverage as a control variable for financial performance (El-Sayed Ebaid, 2009; Jackling & Johl, 2009; Kamardin, 2014; Prime & Qi, 2013). Therefore, consistent with prior studies, firm leverage is included as a control variable and is measured as the ratio of long term debt to total capital (Musteen et al., 2010; Nielsen & Nielsen, 2013).

Firm Size

Firm size is often used as a control variable in corporate governance studies that analyse financial performance (Coles et al., 2008; Vo & Phan, 2013). Influential

work by Fama and French (1992) revealed that firm size is related to market returns whilst other studies found that asset size is related to Tobin's Q ratio (Carter et al., 2010; Faleye, 2007). However previous corporate governance studies have found mixed results on the impact of firm size on financial performance as some studies have found a negative association between the two (Durnev & Kim, 2005; Welch, 2003). A different body of literature suggests firm size has a positive impact on corporate governance mechanisms because of differences in operations, market regulations and agency problems (Beiner et al., 2006; Coles et al., 2008). The study by Coles et al. (2008) notes that larger firms are more likely to have more external resources and are more likely to attract reputable non-executive directors. However, Black et al. (2006) argue that the control and management of large firms is more difficult and this increases agency costs, which may negatively affect financial performance. Consistent with Nielsen and Nielsen (2013) and Musteen et al. (2010), this study includes the natural log of total assets in the regression to control for firm size.

Industry Dynamism

Dynamism refers to any unpredictability or volatility in an environment or industry and Greckhamer et al. (2007) state that empirical evidence suggests industry dynamism is associated with firm performance. Henderson, Miller and Hambrick (2006) report findings consistent with this, as they find that any potential improvements in firm performance were contingent on the dynamism of the external environment or industry. In line with this, Sorenson (2003) found the determinant of firm success and performance in a particular period had no effect in a different volatile environment. In previous studies, scholars have commonly used dynamism as a moderator in explaining firms' strategies, structures and outcomes (Farjoun & Levin, 2011). In this study, industry dynamism is measured by dividing the standard error of the slope coefficient by mean value of sales similar to the measurement used by Dess and Beard (1984) and more recently by Nielsen and Nielsen (2013).

4.5 Characteristics of Data Set

This study uses a panel data set, whereby data of the observed variables is collected for a number of companies *n*, over a period of time *t*. As a result, the dataset

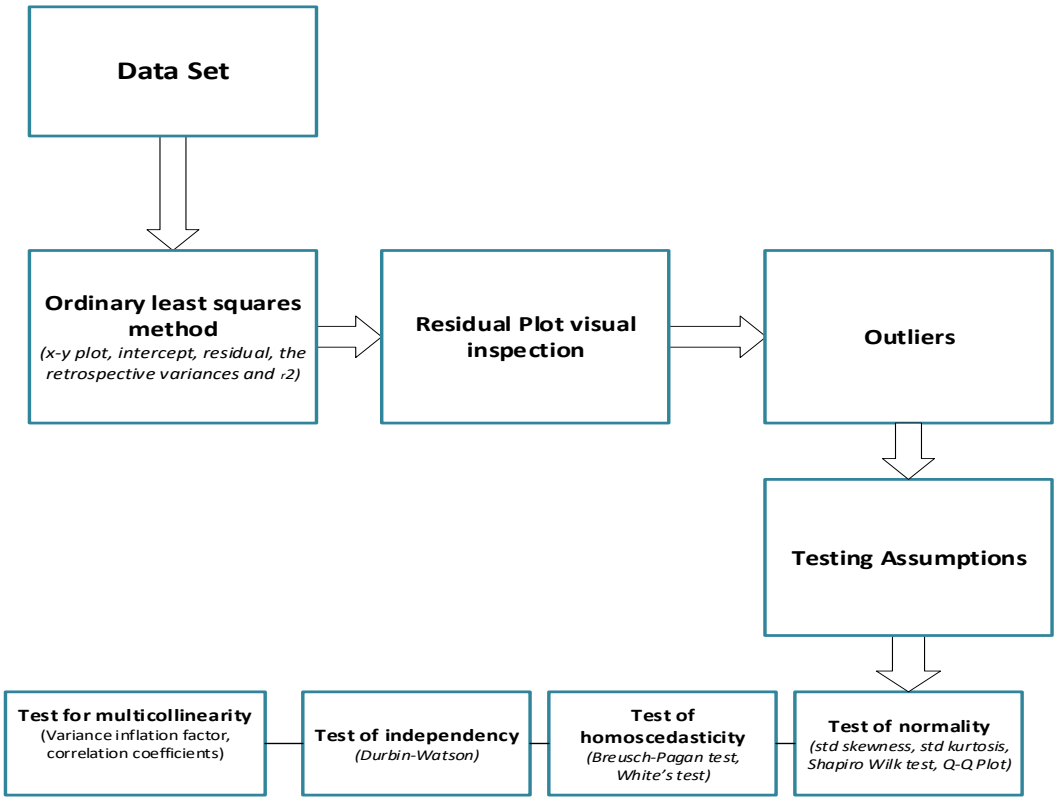
represents a time series of cross-sectional data making it panel data. The presence of both a cross-sectional and time-series element makes panel data more suitable for studying the dynamics of change rather than pure time series or pure cross sectional data. It may be difficult to examine the impact of any change in board diversity on firm performance whilst using cross-section data, therefore analysing the impact of changes in firm performance over a period would be more beneficial. Further to this, panel data is useful for several reasons, which include *"…more informative data, more variability, less collinearity amongst variables and more degrees of freedom…*" (Baltagi, 2008, p.7). Consequently, the multivariate techniques used in panel data estimation are particularly useful for controlling unobserved heterogeneity by allowing for individual-specific variables (Gujarati & Porter, 2009). A large number of existing empirical studies on corporate governance have used firm performance as a dependent variable of corporate governance mechanisms. The majority of these studies have often faced methodological problems related to endogeneity and unobserved heterogeneity. Fauzi and Locke (2012) suggest that econometric issues, such as heteroskedasticity, multicollinearity and endogeneity problems, cause inconsistencies in ordinary least squares (OLS) estimates that have been predominantly used in corporate governance research. Table 4.8 presents a summary of previous studies that have examined the relationship between board structure and firm performance and the methods of analysis employed.

Table 4.8 Prior Empirical Studies on the Relationship between Board Structure and Firm Performance

Paper	Sample	Period	Performance measure	Methodology	Econometric issues faced	Relationship
Bhagat & Black (2002)	934	1988-1991	Q, ROA, ROS, Market returns	OLS, 2SLS	Endogeneity, Reverse causality	Negative
Coles, Daniel & Naveen (2008)	8165	1992-2001	Q	OLS, 3LS	Endogeneity	Positive for large firms, negative for high R&D firms
Guest (2009)	2746	1981-2002	Q, ROA	OLS, Fixed effects, GMM	Unobserved heterogeneity, Simultaneous endogeneity	Positive
Carter, D'Souza, Simkins & Simpson (2010)	641	1998-2002	Q, ROA	OLS, Fixed effects, 3LS	Endogeneity, Omitted Variables	No relationship
Rashid et al. (2010)	274	2005-2009	Q, ROA	Linear regression	Outliers	Negative
Fauzi & Locke (2012)	79	2007-2011	Q, ROA	GLM	Heteroskedasticity, Non-normal distribution, Endogeneity	Positive
Masulis, Wang & Xie (2012)	520	1998-2006	Q, ROA, Market capitalisation, Sales	OLS, 2SLS, Fixed effects	Heteroskedasticity, Endogeneity	Positive
Azeez (2015)	100	2010-2012	EPS, ROA, ROE	OLS	*none reported	Positive for CEO duality and performance Negative for board size and performance
Arora & Sharma (2016)	1922	2001-2010	ROA, ROE, NPM, Q	System GMM	Endogeneity	No relationship
Terjesen, Couto & Francisco (2016)	3876	2010	Q, ROA	GMM	Heteroskedasticity, Endogeneity	Positive

Table 4.8 displays that the ordinary least squares (OLS) regression model has been widely used in the corporate governance literature. In the class of linear unbiased estimators, OLS is considered to be the best estimator as it has the smallest variance under the Gauss-Markov assumptions (Wooldridge, 2016). The OLS model makes several assumptions about the distribution of the variables, which include linearity, homoscedasticity, normality of residuals, autocorrelation and no multicollinearity (Asteriou & Hall, 2016). If any of these assumptions are violated, the OLS estimators become inefficient as they are no longer considered BLUE i.e. the Best Linear Unbiased Estimators (Wooldridge, 2016). Therefore, before conducting the data analysis, several regression diagnostic tests were used to assess the appropriateness and compatibility of this study's data based on the assumptions of classical linear regression model as suggested by De Souza and Junqueira (2005). The process undertaken is illustrated in Figure 4.1.

Figure 4.1 Analysing Appropriateness of Data



Source: Adapted from De Souza and Junqueira (2005)

4.5.1 Outliers

In many data samples, the data points may be found to be further away from the sample mean than what would be expected and this could be for several reasons. Outlier data points can indicate the existence of effects that are not covered by the theoretical framework employed. The OLS regression model is sensitive to the presence of outliers and a plot of the residuals can reveal a trend, if any is present (De Souza & Junqueira, 2005). Outliers were controlled for in this study in order to minimise their influence on the regressions and these results are presented in Appendix E. The appendix shows some extreme values in all the dependent variables that proxy financial performance and for some of the control variables: firm leverage and industry dynamism. For instance, the minimum and maximum values for Tobin's Q are 0.47 and 53.04 respectively; whilst for firm leverage the values are -680.00 and 638.18.

Previous corporate governance studies have either excluded outliers in the data or have winsorized the outliers (Black et al., 2012; Black, Jang, & Kim, 2006; Durnev & Kim, 2005). Winsorization involves transforming the outliers to a specified value that is closer to the normal distribution curve. The presence of outliers can have a significant impact on the regressions, therefore in order to improve the statistical results of this study; winsorization is used for the outliers.[9] The researcher follows scholars such as Black, Jang and Kim (2006) and Guest (2009) by winsorizing the variables to the first and 99th percentiles to remove influential outliers in order to reduce the effect of outliers.

4.5.2 Normality Assumption

The assumption of normality in linear regression looks at the error term by assessing the normality of the residual's distribution. The violation of the normality assumption may arise due to several reasons, which include misspecification of the model, a strong presence of outliers and significant skewness of the dependent variables (Asteriou & Hall, 2016). According to Boldina and Beninger (2016) violation of this assumption is not as critical as other assumptions particularly for hypothesis testing in large samples i.e if N > 30. This is because the central limit theorem confirms that a sample's distribution mean approaches normal distribution as the sample size increases (Fitzmaurice, Laird & Ware, 2012). The normality assumption was checked numerically using the values of skewness and standard kurtosis and the Shapiro-Wilk's test and the normal Q-Q plot (Ghasemi & Zahediasl, 2012).[10] These results are presented in Appendix F for all the dependent variables. A Shapiro-Wilk's test (p value <0.05) and a visual inspection of the histogram and Q-Q plot suggests that Tobin's Q was not approximately normally distributed with a skewness of 1.554 (SE = .079) and a kurtosis of 2.397 (SE =.159). The assumption of normality fails when the residuals show an arch above the diagonal line as displayed in Appendix F. However, in the case of strong non-normality in large data sets,

[9] In line with prior literature, winsorization has not been used on the independent variables as generally corporate governance variables have fewer outliers than dependent and control variables (Durnev & Kim, 2005; Klapper & Love, 2004).

[10] This was conducted on the winsorized values of the dependent variables that removed the extreme outliers.

Boldina and Beninger (2016) state that this can be addressed using generalised linear models (GLM). However, due to the study's sample size being comparable with previous studies (Marinova et al., 2016; McKnight & Weir, 2009; Ooi et al., 2015) and the results not showing strong non-normality for Tobin's Q, the central limit theorem can be assumed to apply.

4.5.3 Homoscedasticity Assumption

The assumption of homoscedasticity states that the variance of the unobserved error, μ, is constant for all values of the independent variable and, in linear models the focus is on the error term that is represented by the residuals (Verbeek, 2008). The homoscedasticity assumption fails when the variance of the unobserved factors varies across different segments of the population and where the segments are determined by the different values of the independent variables (Wooldridge, 2016). This problem is common in cross sectional data sets. The presence of heteroskedasticity in residuals does not necessarily lead to biased parameter estimates, however the OLS estimator will no longer be BLUE once this assumption is violated (Maddala & Lahiri, 2009). In addition, violation of the homoscedasticity assumption results in unreliable standard error estimates of the parameters, which in turn increases the probability of a Type I error and a bias in the confidence intervals (Zuur et al., 2009).[11] A number of alternative statistical tests can be used to judge whether OLS results are misleading due to inappropriate standard errors caused by heteroskedasticity. Boldina and Beninger (2016) suggest that the Breusch-Pagan test is best suited for detecting linear forms of heteroskedasticity. Therefore, this study used the Breusch-Pagan to check for the presence of heteroskedasticity in the data. The results are presented in Table 4.9.

Table 4.9 Heteroskedasticity Test Results

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance Variables: fitted values of TobinQ_wins chi2(1) = 10.32 Prob > chi2 = 0.0013

[11] The presence of heteroskedasticity causes the OLS model to underestimate the standard errors which leads to much higher values of t statistics and F-statistics (Asteriou & Hall, 2016).

The Breusch-Pagan test for heteroskedasticity results in 10.32 (*p-value 0.0013*), indicating that variances amongst the independent variables are not constant. There are several ways of dealing with heteroskedasticity of residuals which include using robust standard errors, weighted least squares model or using generalised least squares which is more common in previous corporate governance studies (Fauzi & Locke, 2012; Zuur et al., 2009). In this study, the researcher uses robust standard errors and an appropriate econometric model (generalised least squares) to deal with the presence of heteroskedasticity.

4.5.4 Independency Assumption

The independency assumption focuses on the serial independence of the residuals and states that the error terms in the regression model are independently distributed (Asteriou & Hall, 2016). The presence of autocorrelation in the error term means that some part of the error term is correlated with another part therefore serial independence of the residuals cannot be assumed (Boldina & Beninger, 2016). Although autocorrelation does not disturb the unbiasedness of the OLS estimator, the estimator will be no longer be the best linear unbiased estimator, as it does not have a minimum variance (Verbeek, 2008). De Souza and Junqueira (2005) argue that the biggest problem with autocorrelation is that once the variance of the least squares estimator is affected, it often results in an underestimation of σ^2 and the confidence intervals. This in turn may lead to inaccurate inference and indicate a false significance of the regressors making hypothesis testing invalid. Boldina and Beninger (2016) state that positive autocorrelation in residuals creates standard errors of estimated parameters that are smaller than the true standard errors. Therefore, the probability of the Type I error, where the null hypothesis is rejected when it is true, is increased in the presence of autocorrelation.

One of the most common tests for testing autocorrelation in residuals is the Durbin-Watson test statistic, which is used in this study's diagnostic checks (see Appendix F). The Durbin-Watson value ranges from 0-4, with a value of 2 indicating

no autocorrelation in the sample. De Souza and Junqueira (2005) note that values between 1.5 and 2.5 are commonly used as lower and uppercut off points for eliminating the presence of autocorrelation. The Durbin-Watson test using the study's main dependent variable, Tobin's Q, resulted in a value of 1.415, which indicates positive autocorrelation is present in the residuals. In contrast to this, the Durbin-Watson test results for ROE and ROA indicate no autocorrelation; therefore, these are used as alternative measures of financial performance for robustness purposes. When the assumption of the absence of autocorrelation fails, OLS is not an appropriate model to use and Maddala and Lahiri (2009) suggest the use of generalised least squares methods. Alternatively, other scholars suggest the use of lags in the dependent variables may resolve autocorrelation and for time series data, statistical software packages, such as STATA, can resolve autocorrelation by re-estimating the model using the Cochrane-Orcutt procedure (Asteriou & Hall, 2016). This study uses generalised least squares and the alternative measures of financial performance to resolve autocorrelation.

4.5.5 Non-perfect Collinearity Assumption

The assumption of the absence of perfect multicollinearity requires no linear relationships between the independent variables because an approximate linear relationship may lead to unreliable regression estimates (Boldina & Beninger, 2016). The presence of perfect multicollinearity amongst the independent variables means the regression coefficients cannot be determined and their standard errors are high or infinite (Verbeek, 2008). Many scholars however, point out that it is important to identify if the degree of multicollinearity observed is high enough to create problems in the regression model (Asteriou & Hall, 2016; Wooldridge, 2016). In this study, the presence of multicollinearity was initially tested using the Pearson correlation matrix to check if significant collinearity exists across the independent variables. The Pearson's correlation matrix in Appendix F, suggests relatively high levels of multicollinearity amongst some of the independent variables. Some of the highest correlations existed between highest education band and education diversity (33.0%); highest experience band and board index (29.8%); and highest experience band and directorships (26.0%). Gujarati and Porter (2009) argue that multicollinearity is only a problem when the correlation between any two independent variables exceeds 80%.

However, multicollinearity cannot only be detected using the Pearson's correlation matrix, and Maddala and Lahiri (2009) together with other scholars suggest that a better method is to examine the variance inflation factors (VIF) for each independent variable.[12] This is presented in Table 4.10.

Table 4.10 Variance Inflation Factors for the Independent Variables

Variable	VIF	1/VIF
Highest Experience Band	1.21	0.824312
Board Index	1.17	0.853796
Education Diversity	1.16	0.863618
Highest Education Band	1.15	0.870736
Directorships	1.11	0.897102
Experience Diversity	1.10	0.907997
Gender Diversity	1.08	0.925359
Age Diversity	1.04	0.962170
Mean VIF	**1.13**	

Wooldridge (2016) suggests that a multicollinearity can be considered a problem when the VIF is above the value 10 as a rule of thumb. Table 4.10 displays that the highest VIF value is 1.21 therefore there is no significant evidence to suggest that multicollinearity is problematic for this data set. In addition, the software package STATA omits variables from the regression model if multicollinearity is present.

4.5.6 Endogeneity

Previous corporate governance and finance research that has examined the relationship between board composition, financial decision making and performance, has often faced serious endogeneity issues. Endogeneity arises when an explanatory variable is also a choice variable that correlates with the random error in the regression model (Ittner & Larcker, 2001). Such misspecification produces inconsistent parameter estimates and this makes hypothesis testing problematic. The challenge of endogeneity can arise from unobserved heterogeneity, reverse causality and

[12] VIF = $1/(1-R^2)$ where R^2 is the squared multiple correlation coefficient between one variable (x^i) and the other independent variables (Maddala & Lahiri, 2009).

simultaneity (De Andres & Vallelado, 2008; Liu et al., 2015). A large body of empirical corporate governance research suggests that certain governance mechanisms lead to improved firm performance, however Wintoki, Linck and Netter (2012) argue that this research suffers from endogeneity issues and consequently, cannot reveal if the causation is reversed. It is difficult to ascertain reverse causation i.e. if firm performance drives good governance or if good governance is just an indication of an unobserved underlying factor that also affects firm performance (Wintoki et al., 2012). For instance, Black, Jang and Kim (2006) argue that firms with a high Tobin's Q may choose to adopt good governance practices as this may potentially enhance their market value. Therefore, there may be a causal association between governance and firm value that would be overestimated by the OLS coefficient.

It appears reasonable to assume the presence of such unobserved effects in this study as board structure is most likely endogenous. For instance, in this study, firm performance may be both influenced by board diversity and, itself, a driver that influences a firm's decision to improve diversity in its boardroom. This endogeneity is problematic when the decision of the board composition is based on latent factors that are correlated with the error term in the regression model (Yang & Zhao, 2014). Roberts and Whited (2013) note that empirical work which faces the problem of endogeneity uses biased and inconsistent parameters, therefore reliable inferences become almost impossible. Researchers suggest that the best econometric solution to the problem of endogeneity is to have an exogenous shock to the board structure by using a model that relies on instrumental variables to generate a set of variables that are not correlated with the error term (Ittner & Larcker, 2001; De Andres & Vallelado, 2008; Wintoki et al., 2012). This study used the test for endogeneity available in STATA to determine the explanatory variables in the data set that are endogenous.[13] In addition, Durbin and Wu Hausman tests both have small p values (p= 0.01) therefore, the null hypothesis is rejected indicating the variables age diversity, highest

[13] This test takes the residual of each explanatory variable from the first stage in the 2SLS regression (this model is discussed in Section 4.6) and regresses this against the dependent variable in the second stage of the 2SLS. A large t statistic and significant p value indicates that the explanatory variable is endogenous.

education band and directorships are all endogenous variables. The results are presented in Table 4.11.

Table 4.11 Test for Endogeneity Results

Independent Variable	t	P>|t|
Age Diversity	2.06	0.040*
Gender Diversity	-1.30	0.193
Education Diversity	-1.84	0.067
Highest Education Band	-2.27	0.023*
Experience Diversity	0.51	0.613
Highest Experience Band	0.83	0.405
Directorships	-2.48	0.013*
Board Index	-0.89	0.373
Tests of endogeneity		
Ho: variables are exogenous		
Durbin (score) chi2(3)	= 11.2171 (p = 0.0106)	
Wu-Hausman F(3,933)	= 3.71997 (p = 0.0112)	

The results show that age diversity, highest education band and directorships are all endogenous variables. Therefore, the problem of endogeneity is applicable to this study's data set. It is evident from the regression diagnostics that several assumptions of the classic linear regression were violated thus the OLS estimators would not be BLUE. Therefore, in order to address these and other econometric issues, an alternative method of analysis was required and this is discussed further in the next section.

4.6 Two Stage Least Squares Regression

Boldina and Beninger (2016) state that a violation of any of the assumptions of OLS regression means that a more robust or better-fitting model should be employed. Therefore, due to some of the violations of the OLS assumptions found in the regression diagnostics above, this study employs an alternative econometric method to address these issues. One of the biggest econometric issues faced in the data set is the problem of endogeneity and many previous corporate governance researchers have faced this problem. This study addresses the issue of endogeneity, the violation of the normality assumption, the issue of heteroskedasticity and the issue of autocorrelation

in several ways. First, appropriate and relevant control variables are used in order to account for other potential influences on firm performance and board characteristics as recognised in the literature. Second, robust standard errors are used in the econometric model to deal with the presence of heteroskedasticity in the data. Third, a Two-Stage Least Square regression (2SLS) model is performed using an instrumental variables approach to deal with endogeneity. In addition, the 2SLS is also estimated using the other dependent variables as the Durbin Watson tests results indicated no autocorrelation for ROE and ROA. Lastly, an alternative regression model is used to deal with the presence of autocorrelation.

The 2SLS is an extension of OLS regression and is commonly used in applied econometrics to address the potential problem of endogeneity and reverse causality (Wooldridge, 2016). Specifically, this method deals with the possibility that the dependent variable has a correlation with the cause of the explanatory variable. Previous researchers have suggested that this is an issue of concern in corporate governance research due to the possibility that companies may change their governance and board structures, only after a period of poor performance (Adams & Ferreira, 2009; Carter et al., 2010). 2SLS also deals with the problem where an explanatory variable has a value that is determined by other variables in the system and therefore correlates with the random error in the regression model. In order to make a causal claim, an exogenous variable that is uncorrelated with the error term is needed (Verbeek, 2008).[14] This study focuses on testing hypotheses formulated in Chapter 3 by considering how a range of independent variables individually affect a dependent variable. This relationship can normally be assessed through a basic econometric model that uses linear regressions estimated by OLS. This is the starting point for the analysis and the equation is represented below:

$$\gamma_{it} = \chi_{it-2}\beta + \varepsilon_{it} \quad \textbf{(4.1)}$$

[14] An endogenous variable is different to an exogenous one in that, it is an inherent function of the other variables in the study (Verbeek, 2008).

Where $\boldsymbol{Y_{it}}$ is the dependent variable, $\boldsymbol{\varepsilon_{it}}$ is the random error term, $\boldsymbol{X_{it}}$ denotes the vector of all independent variables and their associated parameters, $\boldsymbol{\beta}$. The FTSE 350 companies in the study's sample are represented by subscript **i** and the years by subscript **t**. In equation 4.1 ***t-2*** represents a two-year lag that was incorporated in the data set because the effects of board structure on firm performance are not likely to be immediate. However, as previously displayed in the diagnostic checks, the regression model needs to address the presence of unobserved heterogeneity. Two error terms are included in the model; the first term is $\boldsymbol{\mu_i}$ to cover unobserved heterogeneity at firm level; whilst the second is $\boldsymbol{\varepsilon_{it}}$ which is an idiosyncratic error term. This gives the following equation:

$$\gamma_{it} = \chi_{it-2}\beta + \mu_{it} + \varepsilon_{it} \quad \textbf{(4.2)}$$

In order to deal with endogeneity, this study uses a multi-equation model with joint estimation using two-stage least squares. In this equation (4.3), a new dependent variable is denoted by $\boldsymbol{z_{it}}$, whilst $\boldsymbol{\alpha}$, $\boldsymbol{\delta}$ and $\boldsymbol{\theta}$ denote the new parameters that will be estimated in the model. Lastly, in these equations, $\boldsymbol{\upsilon_{it}}$ represents the idiosyncratic error term. The 2SLS equations are as follows:

$$\gamma_{it} = z_{it}\alpha + \chi_{it-2}\beta + \varepsilon_{it} \quad \textbf{(4.3)}$$

$$z_{it} = \gamma_{it}\delta + \chi_{it-2}\theta + \upsilon_{it} \quad \textbf{(4.4)}$$

Further to this, in order for this study to measure a causal relationship, a structural equation is included in the second stage of the 2SLS model. These equations include $\boldsymbol{\chi_{1it-2}}$ as an endogenous regressor that is a subset of $\boldsymbol{\chi_{it-2}}$ and in equation 4.6, $\boldsymbol{\chi_2}$ denotes a different subset of regressors with a causal effect on $\boldsymbol{\chi_{1it-2}}$.

$$\gamma_{it} = \chi_{it-2}\beta + \varepsilon_{it} \quad \textbf{(4.5)}$$

$$\chi_{1it-2} = \chi_{2it-2}\theta + \upsilon_{it} \quad \textbf{(4.6)}$$

Although both the literature and the diagnostic checks have identified the 2SLS model as an appropriate method of analysis for this research, there are some limitations of using this model. Wooldridge (2016) states that one of the biggest limitations of using 2SLS, or any other instrumental variables approach, is the difficulty in obtaining instrumental variables that are adequately uncorrelated with the error term and adequately correlated with the explanatory variables. Previous research suggests that an ideal instrument (*z*) should satisfy two main conditions (Black et al., 2006b; Castineira & Nunes, 1999; Wooldridge, 2016). The first condition is that a good instrumental variable must not be correlated to the disturbance in the equation, the error terms, and the second condition is that good instrumental variables should be correlated with the endogenous variables. Black et al. (2006b) argue that the majority of previous governance studies lacked plausible instruments. Similarly, Wintoki et al. (2012) stated that although instrumental variables techniques can mitigate endogeneity, in corporate governance studies it is difficult to find instrumentals that are not affected by any firm characteristics.

The natural choice for corporate governance researchers has been to use lagged values of the endogenous regressors as instruments (Terjesen et al., 2016). However, the data set employed in this research has already incorporated a time lag in the data to capture the stance that the effects of a change in the governance structure on firm performance are not likely to be immediate. Therefore, the researcher uses a different set of instrumental variables following the work of Jermias and Gani (2014). The instrumental variables used are total equity, total sales, capital intensity, operating margin,[15] length of operating cycle[16] and sales growth. These instruments are selected in line with previous research that suggests these variables are all credible instruments for corporate governance because there is no theoretical reason for these variables to be endogenous to firm performance or corporate governance (Black et al., 2006b; Ittner & Larcker, 2001; Jermias & Gani, 2014). The validity of the instrumental variables is tested using Basmann's (1957) and Sargan's (1958) test for over identified

[15] Operating margin is calculated as sales minus cost of goods sold divided by sales (Jermias & Gani, 2014).
[16] Length of operating cycle is calculated as average receivables divided by sales plus average inventory divided by cost of goods sold (Jermias & Gani, 2014).

restrictions. These tests both examine the correlation between the instruments and the models' residuals in order to check whether the instrumental variables are uncorrelated with the error term (Arora & Sharma, 2016). The results indicate that the null hypothesis of no correlation between the instrumental variables and the error term cannot be rejected (*chi2(3) = 2.64474 p = 0.4497* for Sargan's test and *chi2(3) = 2.60742 p = 0.4562* for Basmann's test). In addition, STATA has its own test for testing overidentifying restrictions and the score for this was *chi2(3) = 4.05304 (p = 0.2558)*. This means that the null hypothesis that the instruments are valid is accepted. For this and theoretical reasons, the instrumental variables selected are considered to be plausible and valid instruments.

4.7 Robustness Checks and Generalised Least Squares

The regression diagnostic checks conducted on the data suggested that the assumptions of normality, homoscedasticity and independency were violated. In these cases, the extant literature recommends the use of generalised least squares as a regression model (Boldina & Beninger, 2016; Fauzi & Locke, 2012; Zuur et al., 2009). Therefore, for robustness purposes, this study conducts a generalised least squares (GLS) regression model in addition to the 2SLS regression. The GLS estimator is a transformed model of the OLS estimator and is considered the best linear unbiased estimator for β in the presence of autocorrelation and heteroskedasticity (Verbeek, 2008). The GLS estimators for correcting heteroskedasticity are also referred to as weighted least squares. This is because parameters in this model minimise the weighted sum of squared residuals such that observations with a higher error variance are given the least weights in the estimation (Verbeek, 2008). Therefore, the GLS estimator can also estimate the structure of heteroskedasticity from OLS and this method is referred to as feasible generalised least squares regression (FGLS). Consequently, FGLS involves transforming an OLS regression model with heteroskedastic errors into a model with homoscedastic errors and, this in turn satisfies the Gauss-Markov assumptions (Wooldridge, 2016). Haddad, Rahman and Kuczera (2011) note that a GLS model provides more accurate estimates than OLS because its estimators have regression coefficients with smaller mean-square errors than OLS estimates. This makes FGLS an attractive alternative to OLS with some scholars, such as Wooldridge (2016) proposing that the FGLS estimator is generally more consistent

and asymptotically more efficient than OLS. Equation 4.7 below shows the FGLS model.

$$\gamma *_{it} = \chi *_{it-2} \beta + \mu *_{it} \quad \textbf{(4.7)}$$

Where $\boldsymbol{Y_{it}}$ is the dependent variable, $\boldsymbol{\mu_{it}}$ is the random error term, $\boldsymbol{X_{it}}$ denotes the vector of all independent variables and their associated parameters, $\boldsymbol{\beta}$. In addition, $\boldsymbol{\chi *_{it-2}} = \mathbf{1}/\sqrt{\boldsymbol{h_i}}$ and all the other starred variables signify the corresponding original variables divided by $\mathbf{1}/\sqrt{\boldsymbol{h_i}}$. In this case $\boldsymbol{h}$ (x) is some function of the independent variables that determines heteroskedasticity.[17] Equation 4.7 is linear in its parameters, the standard error $(\boldsymbol{\mu_i})$ has a zero mean and a constant variance $(\boldsymbol{\sigma^2})$, conditional on the explanatory variables. Therefore, in this case, FGLS is an unbiased and efficient estimator (Wooldridge, 2016).

4.8 Research Ethics

Research ethics is concerned with the moral principles and standards of behaviour that guide the researcher's choices on designing research, gaining access, collecting data and analysing the data (Zikmund et al., 2010). Therefore, ethical considerations are an integral part of the research process, as they can impact participants, organisations and the overall quality, integrity and reliability of the research and research methods used (Bryman, 2016). High ethical standards are important for several reasons, which include the protection of both researchers and participants, generating 'clean' research and guarding the reputation of the University and institutions associated with the research. This study was designed and implemented in line with the research and governance policy and guidelines of Northumbria University. These guidelines endeavour to maintain the highest standards of academic integrity and ethical practice in research. In line with this, the researcher ensured that throughout the research process, their conduct was consistent with the ethical imperative of respect, the intent to do no harm and, to contribute to knowledge and practice in the society (Northumbria University, 2019). Full approval for this

[17] $\boldsymbol{h^i}$ is merely a function of $\mathbf{x}^i$ therefore $\boldsymbol{\mu_i/\sqrt{h_i}}$ has a zero expected value conditional on $\mathbf{x}^i$.

research was obtained from Northumbria University's Ethics Committee and given ethical clearance prior to data collection.

This study used secondary data from Bloomberg and the annual reports of the sample companies. This data is accessible in the public domain thus eliminating ethical issues concerning access, informed consent, confidentiality and anonymity in obtaining the information. However, Cooper and Dent (2011) note that when using secondary data available in the public domain, some key ethical issues to consider relate to the process of analysing, reporting and publishing the results. Similarly, Zikmund et al. (2013) state that the results of research should not be misrepresented and researchers should maintain high standards to ensure that their data is accurate and, that the results are not overstated or understated. The researcher acknowledges that data gathered should not be misrepresented to suit the needs of this research, or the ideas of the researcher. O'Leary (2010) states that it is vital for researchers to maintain objectivity throughout the research process. This study has employed a consistent method of analysis for all the data gathered, including robustness checks and validity tests, to ensure internal consistency. For instance, the Cronbach's Alpha test results discussed in section 4.4.2 showed that this study's board index had an acceptable internal consistency and is therefore reliable. The researcher has taken every possible measure to maintain integrity and objectivity throughout the different stages of the research process in this study. In addition, the interpretations presented in subsequent chapters reflect data generated and analysed rather than the researcher's personal judgements.

All of the data gathered for this study was kept securely and stored on a secure hard disk and U-Drive, which both require the researcher's username and password for access. The data for this study has been retained for future use for writing journals within a limited timeframe and with the aim of contributing further to knowledge and practice in the society. This is in line with the retention schedule of Northumbria University that is detailed in the research ethics and governance handbook (Northumbria University, 2019).

4.9 Summary of Chapter

This chapter has discussed the research methodology, sampling strategy and the measurements of the variables in this study. This chapter has covered three main issues: i) issues related to research philosophy, sample selection and data collection; ii) discussing the measurement of all the variables employed in this study; and iii) discussing the construction of the board index that was constructed for this study. The first section discusses the research methodology, which follows a deductive approach and is based on a realist ontology and positivist epistemological stance. After the sample is screened, the final sample size consisted of 198 companies that were broken down into 16 industry sectors according to their SIC classification codes. This process forms part of the study's contribution to literature and is consistent with the propositions of the upper echelons framework. The next section discussed the measurement of all the dependent, independent and control variables employed in this study. As explained, this study uses a self-constructed board index that examines specific attributes of the board of directors and is country specific to the UK. This chapter also presented the characteristics of the study's data set and diagnostic regression checks in order to evaluate the most appropriate model to be used in the analysis. It was evident that several of the classic linear regression model assumptions were violated, such as the assumption of homoscedasticity and the assumption of independency. Therefore, the OLS estimators would be not be considered to be the best unbiased linear estimators. Consequently, the two-stage least squares regression method using the instrumental variables approach and robust standard errors is considered to be an appropriate technique for this study as it addresses the issues in the data set that were highlighted in the diagnostic checks. In addition, the GLS estimation method will be used as an alternative analysis model for robustness purposes. This is also in line with the extant literature that suggests GLS is the best alternative to the OLS model where there are heteroskedastic errors and where there is autocorrelation. The next chapter presents the summary descriptive statistics and multivariate analysis for all the variables used to examine the impact of board diversity on financial performance.

CHAPTER 5 FINDINGS AND DISCUSSION PART I

5.1 Introduction to Chapter

The research objective of this study is to examine the impact of board diversity on the financial performance of FTSE 350 companies in the UK. Therefore, this chapter examines the association between board diversity and financial performance and in so doing, it addresses research questions 1 and 2 and the hypotheses formulated in Chapter 3. The multivariate analysis presented in this chapter examines and presents different regression models based on the ordinary least squares regression (OLS), two stage least squares regression (2SLS) and generalised least squares regression (GLS). The main dependent variable used to measure financial performance in this study is Tobin's Q; however, alternative measures of financial performance are used for robustness purposes, namely ROA and ROE.

The chapter is organised as follows: Sections 5.2 to 5.4 present the descriptive statistics for all the dependent variables, the independent variables and the control variables, respectively. Sections 5.5 and 5.6 present the multivariate analysis and Akaike Information Criteria test results that address research question 1, whilst Section 5.7 presents the multivariate analysis that addresses research question 2 and the study's hypotheses. Section 5.8 discusses the differences in the findings using market based versus accounting based measures of performance, whilst Section 5.9 discusses the control variables. Section 5.10 discusses how the findings contribute to knowledge and lastly, Section 5.11 summarises the chapter. Table 5.1 presents a summary of the research questions, hypotheses formulated and the analysis to be conducted.

Table 5.1 Summary of Research Questions and Hypotheses

Research Questions	*Hypotheses*	*Analysis*
Research Question 1: ***Which theoretical framework is the best modelling tool of board diversity and financial performance?***	-	OLS regression and AIC analysis of different models
Research Question 2: ***Is there a relationship between board diversity and financial performance?***	***Hypothesis 1***. *The board index is positively associated with financial performance.* ***Hypothesis 2.*** *Age diversity on the board of directors is positively associated with financial performance.* ***Hypothesis 3.*** *Gender diversity on the board of directors is positively associated with financial performance* ***Hypothesis 4.*** *The education level of the board of directors is positively associated with financial performance.* ***Hypothesis 5.*** *The educational diversity of the board of directors is positively associated with financial performance.* ***Hypothesis 6.*** *The experience level of directors is positively associated with financial performance.* ***Hypothesis 7.*** *The experience diversity of directors is positively associated with financial performance.* ***Hypothesis 8.*** *Multiple directorships on the board of directors are positively associated with financial performance.*	OLS, 2SLS, GLS

Research Question 3: ***Does the relationship between board diversity and financial performance differ amongst industries?***	***Hypothesis 9.*** *The association between the board index and financial performance differs between industries.* ***Hypothesis 10.*** *The association between age diversity of the board of directors and financial performance differs between industries.* ***Hypothesis 11.*** *The association between gender diversity of the board of directors and financial performance differs between industries.* ***Hypothesis 12.*** *The association between education levels of the board of directors and financial performance differs between industries.* ***Hypothesis 13.*** *The association between education diversity of the board of directors and financial performance differs between industries.* ***Hypothesis 14.*** *The association between experience levels of the board of directors and financial performance differs between industries.* ***Hypothesis 15.*** *The association between experience diversity of the board of directors and financial performance differs between industries.* ***Hypothesis 16.*** *The association between Multiple directorships on the board of directors and financial performance differs between industries.*	OLS, 2SLS, GLS *to be discussed in Chapter 6.

5.2 Descriptive Statistics: Dependent Variables

This section shows the descriptive statistics of the dependent variables, Tobin's Q, ROA and ROE. Initially, a series of descriptive statistics was conducted on these variables in order to display their measures and distribution. In Chapter 4, it was noted that these variables were winsorized to values that are closer to the normal distribution curve. Therefore, Table 5.2 summarises the descriptive statistics conducted after the dependent variables were transformed for normality, as well as separately for each of the two yearly periods between the years 2004 and 2014. Appendix G shows the descriptive statistics before they were winsorized and transformed for normality. The sample of this study comprises a total of 198 companies listed in the FTSE 350 index and the sample data was collected for the period 2004 to 2014. Three performance measures, Tobin's Q, ROE and ROA, were used in this study for robustness purposes where a higher value indicates a higher level of financial performance. Table 5.2 shows that Tobin's Q has a mean of 1.712 across all the years, with a minimum value of 0.47 and a maximum value of 4.82. This is consistent with previous studies that have found the mean of Tobin's Q in listed companies ranges from 1.5 to 3.9 and these values indicate good performance (Hejazi, Ghanbari & Alipour, 2016; Firth et al., 2012; Ma & Khanna, 2016). In regards to ROE, it has a mean of 14.285, with a minimum value of -26.27 and a maximum value of 57.66. ROA has a mean of 7.015, with a minimum value of -18.47 and a maximum value of 33.91. These results show similar trends with the descriptive statistics in Appendix G, and they all show that the mean values of all the dependent variables saw a sharp decrease between the years 2006 and 2008. In addition, lowest minimum values can be seen in the year 2008 for all the dependent variables and this may indicate the effect of the 2007/8 financial crisis as these values start to improve from 2010 onwards.

Table 5.2 Descriptive Statistics of the Dependent Variables after Transformation for Normality

Variables		2006[18]	2008	2010	2012	2014	All Years
Tobin's Q	N=	157	198	198	198	198	949
	Mean	1.972	1.489	1.694	1.654	1.805	1.712
	Std. Dev	0.909	0.748	.838	0.836	0.915	0.861
	Min	0.90	0.47	0.62	0.56	0.64	0.47
	Max	4.82	4.82	4.82	4.82	4.82	4.82
	Skewness	1.307	1.932	1.580	1.690	1.385	1.554
	Kurtosis	4.247	7.642	5.668	5.940	4.599	2.397
ROE	N=	157	198	198	198	198	949
	Mean	18.066	14.172	13.657	13.301	13.013	14.285
	Std. Dev	13.935	16.565	11.437	12.599	13.493	13.783
	Min	-22.00	-26.27	-8.82	-22.98	-26.27	-26.27
	Max	57.49	57.49	57.49	57.66	57.49	57.66
	Skewness	.686	.458	1.605	1.060	1.198	0.896
	Kurtosis	4.203	4.092	6.843	6.209	6.452	2.348
ROA	N=	157	198	198	198	198	949
	Mean	8.561	6.420	6.973	6.527	6.912	7.015
	Std. Dev	7.477	9.076	6.358	6.702	7.875	7.581
	Min	-16.00	-18.47	-5.07	-18.47	-18.47	-18.47
	Max	33.71	33.91	33.71	33.71	33.71	33.91
	Skewness	.789	.194	1.477	0.309	0.735	0.576
	Kurtosis	4.792	4.922	6.579	5.697	5.767	2.752

[18] The descriptive statistics for the dependent variables start from the year 2006 as a two-year lag was incorporated in the data for financial performance therefore the data was collected from 2006 onwards.

5.3 Descriptive Statistics: Independent Variables

This section presents the descriptive statistics of the independent variables, age diversity, gender diversity, highest education band, education diversity, highest experience band, experience diversity, directorships and the board index. The measurements and description of these variables was previously discussed in Section 4.4 of Chapter 4. The descriptive statistics of the independent variables are presented in Table 5.3.

Table 5.3 Descriptive Statistics of the Independent Variables

Variables		2004	2006	2008	2010	2012	All Years
Age Diversity	N=	157	198	198	198	198	949
	Mean	.403	.408	.405	.382	.380	.395
	Std. Dev	.120	.121	.111	.132	.138	.125
	Min	0	0	0	0	0	0
	Max	0.65	0.65	0.69	0.69	0.64	0.69
	Skewness	-1.113	-1.314	-1.023	-1.125	-.980	-1.137
	Kurtosis	4.825	5.297	4.641	4.072	3.708	4.497
Gender Diversity	N=	157	198	198	198	198	949
	Mean	5.972	8.031	8.743	9.731	14.729	9.591
	Std. Dev	7.894	8.797	8.398	8.813	9.763	9.235
	Min	0	0	0	0	0	0
	Max	37.5	37.5	43	37.5	44.44	44.44
	Skewness	1.380	.884	.866	.625	.260	.748
	Kurtosis	4.703	3.017	3.913	2.844	2.881	3.090
Highest Education Band	N=	157	198	198	198	198	949
	Mean	1.306	1.343	1.349	1.303	1.389	1.339
	Std. Dev	.539	.582	.583	.503	.557	.554
	Min	1	1	1	1	1	1
	Max	3	3	3	3	3	3
	Skewness	1.558	1.482	1.454	1.329	1.065	1.386
	Kurtosis	4.494	4.161	4.080	3.721	3.127	3.951
Education Diversity	N=	157	198	198	198	198	949
	Mean	.504	.507	.502	.497	.496	.501
	Std. Dev	.144	.121	.121	.132	.131	.129
	Min	0	0.17	0	0	0	0
	Max	0.73	0.74	0.74	0.74	0.70	0.74
	Skewness	-1.052	-.739	-.809	-1.310	-1.211	-1.056
	Kurtosis	4.138	3.233	3.801	5.596	5.007	4.552
Highest Experience Band	N=	157	198	198	198	198	949
	Mean	2.694	2.783	2.788	2.849	2.879	2.803
	Std. Dev	.704	.644	.649	.540	.519	.613
	Min	0	0	0	0	0	0
	Max	3	3	3	3	3	3
	Skewness	-2.591	-3.427	-3.441	-4.174	-4.741	-3.571
	Kurtosis	9.330	14.468	14.339	20.854	25.295	15.580
Experience Diversity	N=	157	198	198	198	198	949
	Mean	.462	.436	.412	.383	.386	.414
	Std. Dev	.170	.179	.179	.189	.186	.183
	Min	0	0	0	0	0	0
	Max	0.72	0.72	0.74	0.74	0.72	0.74
	Skewness	-.847	-.779	-.589	-.571	-.550	-.655
	Kurtosis	3.345	3.126	2.745	2.656	2.629	2.838
Directorships	N=	157	198	198	198	198	949
	Mean	.935	.965	.908	.769	.767	.866
	Std. Dev	.424	.403	.416	.424	.386	.418
	Min	0	0	0	0	0	0
	Max	2.333	2.111	2.4	3.33	2.71	3.33
	Skewness	.482	.279	.662	1.385	.685	.688
	Kurtosis	3.583	2.853	4.079	8.813	5.225	4.676

Board Index	N=	157	198	198	198	198	949
	Mean	24.127	25.601	26.985	28.111	29.919	27.071
	Std. Dev	3.823	2.997	2.838	2.929	3.286	3.712
	Min	6	6	7	7	4	4
	Max	30	31	32	33	34	34
	Skewness	-1.558	-2.052	-2.302	-2.552	-3.883	-1.632
	Kurtosis	6.899	12.404	15.458	17.105	26.328	8.993

Age diversity was calculated using the Blau's index measure, which ranges from 0-0.75 with higher values representing greater diversity. The mean value for age diversity across all the years was 0.395 which represents moderate age diversity as the maximum value that could have been achieved for age diversity using the Blau index measure was 0.75. The mean value of age diversity steadily decreased each year between 2008 and 2012, which is notably after the financial crisis of 2007/8. This contradicts previous scholars who suggest that diversity improved after the financial crisis in order to move away from the 'groupthink' phenomenon (Ford, 2010). Gender diversity has a mean value of 9.591% across all the years, and the mean value saw a steady yearly increase in the sample period. The largest yearly increase was between 2010 and 2012, and this may have been in response to the Davies review in 2011 that challenged FTSE 100 companies to review gender diversity on their boards and achieve a target number of 25% of women directors by 2015 (Lord Davies Review, 2011). The highest education band variable has a mean value of 1.339 for all the years and this is consistent across each year. This band represents an undergraduate degree or equivalent and the minimum value for this variable was 1, showing that the minimum highest education level on the boards of each company was at least an undergraduate degree.

The descriptive statistics for education diversity and experience diversity show similar trends to that of age diversity, with a mean value of 0.501 and 0.414 respectively across all the years. In addition, the mean values of these two variables steadily decreased between the years 2008 and 2012. This shows that the educational diversity and experience diversity of the boards decreased from the year 2008 onwards. The minimum value of both variables was 0 whilst the maximum value was

0.74 and this covers the spectrum of Blau's index in which a value of 0 indicates perfect homogeneity and a value of 0.75 represents perfect diversity. Education diversity and experience diversity are the only variables in the data set that were the closest to achieving perfect diversity on the scale of Blau's index. The highest experience band variable has an average value of 2.803 across all the years and this band (rounded up to 3) represents previous appointments as either a director or CEO. This was the highest experience band on the scale, in line with Gray and Nowland (2013) who suggest that prior experience as a director or equivalent is the best possible experience a director can possess. The minimum value for highest experience band, as shown in Table 5.3, was 0 which represents no previous appointments at director level, managerial level or in a core functional background having been held. The mean value for the variable directorships was 0.866 across all the years and the mean values steadily decreased each year in the sample period. The largest decrease in mean value was between the years 2008 and 2010. This trend is consistent with the recommendations of the UK Corporate Governance Code (2014) that suggests the independence of non-executive directors may be affected when these directors hold multiple directorships or when they hold significant links with other directors. The variable board index has a mean value of 27.071 for all the years and generally, the mean, minimum and maximum values of the board index increased yearly over the sample period. In 2012, the maximum value was 34 which is highest score that could be achieved for this variable. This suggests that the board structure and procedures of the sample companies improved over the sample period.

5.4 Descriptive Statistics: Control Variables

This section shows the descriptive statistics of the control variables, firm age, firm leverage, firm size and industry dynamism. Table 5.4 displays the descriptive statistics of all the control variables used in this study. The analysis of skewness and kurtosis shows that the variables firm leverage and industry dynamism were not normally distributed, therefore these variables were transformed for normality as discussed in Chapter 4 relating to the regression diagnostics. Table 5.4 shows that the mean value of firm leverage decreased over the years in the sample period suggesting that the companies were decreasing their levels of debt over the period. In addition,

the mean value of industry dynamism decreased from 13.241 in the year 2008, to 7.765 in 2010, and continued to decrease thereafter. This suggests that the market environment was highly volatile in 2008 and became less volatile from 2010 onwards. The descriptive statistics for firm age and firm size are as expected.

Table 5.4 Descriptive Statistics of the Control Variables

Variables		2006[19]	2008	2010	2012	2014	All Years
Firm Age	N=	157	198	198	198	198	949
	Mean	34.382	32.672	34.667	36.662	38.652	35.451
	Std. Dev	34.250	33.365	33.380	33.373	33.367	33.510
	Min	0	0	1	3	5	0
	Max	137	139	141	143	145	145
	Skewness	1.240	1.381	1.380	1.380	1.380	1.347
	Kurtosis	3.455	3.906	3.906	3.905	3.905	3.820
Firm Leverage [20]	N=	157	198	198	198	198	949
	Mean	34.670	28.346	29.671	27.978	29.433	29.819
	Std. Dev	56.181	56.264	24.857	23.580	24.649	39.402
	Min	0	-680	-9.52	0	0	-680
	Max	638.18	98.38	108.65	103.3	160.43	638.18
	Skewness	8.203	-10.071	.867	.830	1.207	-1.973
	Kurtosis	86.599	128.281	3.388	3.208	6.123	172.225
Firm Size	N=	157	198	198	198	198	949
	Mean	8.185	8.294	8.368	8.462	8.546	8.379
	Std. Dev	1.846	1.888	1.910	1.898	1.875	1.885
	Min	4.980	3.890	3.926	3.696	3.766	3.696
	Max	14.437	14.743	14.714	14.806	14.784	14.806
	Skewness	.989	1.056	1.038	1.028	1.020	1.024
	Kurtosis	3.955	4.278	4.001	4.011	4.034	4.058
Industry Dynamism [21]	N=	157	198	198	198	198	949
	Mean	11.951	13.241	7.765	6.845	1.697	8.142
	Std. Dev	18.774	27.657	30.757	21.730	15.591	24.064
	Min	-51.06	-50.69	-62.57	-29.04	-77.88	-77.8
	Max	97.6	210.22	365.85	165.46	70.2	365.85
	Skewness	.913	3.497	8.108	4.056	.153	5.419
	Kurtosis	6.969	27.015	94.526	25.781	9.233	67.026
Firm Leverage_wins[22]	N=	157	198	198	198	198	949
	Mean	30.454	31.737	29.671	27.978	29.188	29.778
	Std. Dev	25.404	24.780	24.857	23.580	23.556	24.386
	Min	0	-8.52	-9.52	0	0	-9.52
	Max	111.87	98.38	108.65	103.3	111.87	111.87
	Skewness	1.072	.547	.867	.830	.757	.812
	Kurtosis	4.109	2.571	3.388	3.208	3.258	3.298
Industry Dynamism_wins[23]	N=	157	198	198	198	198	949
	Mean	11.565	11.597	6.035	5.407	1.780	7.092
	Std. Dev	17.211	19.020	16.122	14.543	14.550	16.737
	Min	-44.94	-44.94	-45.94	-29.04	-44.94	-45.94
	Max	58.47	58.47	58.47	58.47	58.47	58.47
	Skewness	.393	-.146	.467	1.418	.525	.500
	Kurtosis	4.778	4.165	5.526	7.153	6.368	5.034

[19] The descriptive statistics for the control variables start from the year 2006 as a two-year lag was incorporated in the data and this was also applicable to the control variables.
[20] This is the data for the variable firm leverage before it was transformed for normality.
[21] This is the data for the variable industry dynamism before it was transformed for normality.
[22] This is the data for the variable firm leverage after it was transformed for normality.
[23] This is the data for the variable industry dynamism after it was transformed for normality.

5.5 Multivariate Analysis: Research Question 1

In this section results from the ordinary least square regressions (OLS) that relate to research question 1 will be presented and discussed. The first research question of this study is: *which theoretical framework is the best predictor of board diversity and financial performance*? Carter et al. (2010) posit that no one theory can directly predict the nature of the relationship between board diversity and financial performance; therefore, it is important to adopt several theories across different disciplines to provide insight into this relationship. This study addresses research question 1 in three ways. First, in Chapter 2, a review of the literature showed that the majority of previous corporate governance studies are dominated by a single theoretical framework and they do not adopt an integration of different theories. Second, the chosen theoretical framework of the study that comprises agency, resource dependence and upper echelons theories is discussed in Chapter 3. Chapter 3 also discusses the need to adopt a theoretical framework that encompasses these three theories in order to predict the relationship between board diversity and performance including the variables that arise from this study's theoretical framework.

Lastly, the first research question is addressed in this section by evaluating four OLS models comprised of different variables in order to find the model that best explains any variations in the dependent variable. The first model displays the OLS results for all the variables derived from the theoretical framework. Model two displays the OLS results for the variables derived from agency theory, these are, highest experience band, experience diversity and the board index. Model three displays the OLS results for the variables derived from resource dependence theory; these are highest education band, education diversity, highest experience band, experience diversity and directorships. Model four displays the OLS results for the variables derived from upper echelons theory; these are age diversity, gender diversity, highest education band, education diversity, highest experience band, experience diversity and directorships.[24] Examining the four models is useful in identifying the

[24] Table 3.2 in the theoretical framework chapter presented a summary of the research questions and theories alongside a summary of the variables that arise from each theory.

explanatory variables of the individual theories and assessing whether there was a need to combine the three theories together to gain greater explanatory power.

5.5.1 OLS Regression and Akaike Information Criteria Findings

The OLS regression results are presented in Tables 5.5 and 5.6. Table 5.5 presents the OLS results using Tobin's Q as the dependent variable whereas Table 5.6 presents the OLS results using ROE and ROA as alternative measures of financial performance. The sign of coefficients and significance together with the R-squared and F statistics are reported in the tables. The diagnostics presented in Chapter 4 displayed that OLS was not the best linear unbiased estimator for this study's data set. However, when addressing the first research question, OLS is the most appropriate technique in comparing the regression models and evaluating the model fit. Three statistics in the OLS regression can be used to evaluate the model fit, R-squared, F-test and the Root Mean Square Error (RMSE). The R-squared measures the overall fit of the model and looks at the proportion of the variation on the dependent variable that is explained by the independent variables (Flora, 2018). Table 5.5 shows that the applicable R-squared values range from 0.2394 to 0.1976 for the models, with model one explaining the greatest proportion of the variation on Tobin's Q by the independent variables. Notably, model four has an R-squared of 0.2368, which is slightly lower than that of model one.

Table 5.5 Full Sample OLS results of Tobin's Q

	Model 1 Tobin's Q		**Model 2** Tobin's Q		**Model 3** Tobin's Q		**Model 4** Tobin's Q	
	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)
Explanatory variables								
AgeDiversity	-.446**	(.206)					-.465**	(.206)
GenderDiversity	.012***	(.003)					.013***	(.003)
HighestEducationband	.175***	(.049)			.208***	(.050)	.178***	(.049)
EducationDiversity	.229	(.194)			.233	(.191)	.249	(.192)
HighestExperienceband	.071*	(.038)	.091**	(.036)	.098***	(.034)	.094***	(.035)
ExperienceDiversity	.043	(.149)	-.091	(.150)	-.030	(.152)	.041	(.150)
Directorships	.138**	(.062)			.128**	(.063)	.135**	(.062)
BoardIndex	.013	(.009)	.022**	(.009)				
Control Variables								
FirmAge	-.002**	(.001)	-.002**	(.001)	-.001*	(.001)	-.001**	(.001)
FirmSize	-.221***	(.013)	-.190***	(.013)	-.203***	(.013)	-.219***	(.014)
Firmlev_Wins	-.002	(.001)	-.002	(.001)	-.002	(.001)	-.002	(.001)
IndDyna_Wins	.006***	(.001)	.006***	(.001)	.005*	(.001)	.006***	(.001)
Number of obs	949		949		949		949	
F	24.26		31.66		28.55		26.03	
Prob > F	0.0000		0.0000		0.0000		0.0000	
Root MSE	.75573		.77415		.7666		.75665	
R-squared	0.2394		0.1976		0.2149		0.2368	

The sample consists of 949 firm-year observations from 2004 to 2014. Model 1 presents the OLS results for all the variables derived from the theoretical framework. Model 2 presents the OLS results for the variables derived from agency theory, whilst model 3 presents the OLS results for the variables derived from resource dependence theory. Model 4 presents the OLS results for the variables derived from upper echelons theory. The dependent variable used is Tobin's Q. The independent and control variables are defined in Table 4.5 of Chapter 4. Robust standard errors are used in the OLS regression to account for heteroskedasticity. The coefficients are reported in the unstandardized form. Superscripts ***, ** and * stand for statistical significance based on two-tailed tests at the 1%, 5% and 10% significance levels respectively.

Table 5.6 Full Sample OLS results of ROE and ROA

	Model 1				Model 2				Model 3				Model 4			
	ROE		ROA		ROE		ROA		ROE		ROA		ROE		ROA	
	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)
Explanatory variables																
AgeDiversity	-6.679**	(3.419)	-4.816**	(1.945)									-6.78**	(3.430)	-4.952**	(1.958)
Gender Diversity	.154***	(.045)	.079***	(.023)									.159***	(.045)	.086***	(.023)
Highest Education band	1.776**	(.825)	1.067**	(.457)					2.17***	(.822)	1.31***	(.458)	1.792**	(.824)	1.089**	(.456)
Education Diversity	-.156	(3.113)	.422	(1.639)					-.253	(3.082)	.463	(1.632)	-.053	(3.125)	.567	(1.652)
Highest Experience band	.398	(.637)	.108	(.382)	.734	(.616)	.306	(.378)	.588	(.595)	.328	(.362)	.516	(.603)	.273	(.363)
Experience Diversity	6.001**	(2.550)	2.368*	(1.364)	4.340*	(2.546)	1.448	(1.356)	5.114**	(2.561)	1.870	(1.368)	5.992**	(2.547)	2.356*	(1.361)
Directorships	2.506**	(.987)	1.268**	(.568)					2.437**	(.998)	1.245**	(.576)	2.490**	(.986)	1.245**	(.566)
BoardIndex	.068	(.103)	.095	(.059)	.170	(.104)	.153**	(.060)								
Control Variables																
FirmAge	-.036***	(.012)	-.009	(.006)	-.037***	(.012)	-.009	(.006)	-.034***	(.012)	-.007	(.006)	-.036***	(.012)	-.008	(.006)
FirmSize	-2.49***	(.226)	-1.53***	(.120)	-2.11***	(.212)	-1.30***	(.116)	-2.27***	(.220)	-1.39***	(.118)	-2.48***	(.227)	-1.51***	(.121)
Firmlev_Wins	-.065***	(.021)	-.050***	(.010)	-.066***	(.021)	-.051***	(.010)	-.064***	(.021)	-.049***	(.010)	-.065***	(.021)	-.049***	(.010)
IndDyna_Wins	.128***	(.027)	.069***	(.015)	.127***	(.027)	.069***	(.015)	.118***	(.027)	.062***	(.015)	.126***	(.027)	.067***	(.015)
Number of obs	949		949		949		949		949		949		949		949	
F	15.30		18.91		22.61		27.82		18.73		22.52		16.68		20.25	
Prob > F	0.0000		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000	
Root MSE	12.621		6.826		12.775		6.9222		12.708		6.8909		12.617		6.8299	
R-squared	0.1721		0.1994		0.1473		0.1723		0.1580		0.1815		0.1718		0.1977	

The sample consists of 949 firm-year observations from 2004 to 2014. Model 1 presents the OLS results for all the variables derived from the theoretical framework. Model 2 presents the OLS results for the variables derived from agency theory, whilst model 3 presents the OLS results for the variables derived from resource dependence theory. Model 4 presents the OLS results for the variables derived from upper echelons theory. The dependent variable used is Tobin's Q. The independent and control variables are defined in Table 4.5 of Chapter 4. Robust standard errors are used in the OLS regression to account for heteroskedasticity. The coefficients are reported in the unstandardized form. Superscripts ***, ** and * stand for statistical significance based on two-tailed tests at the 1%, 5% and 10% significance levels respectively.

The results in Table 5.5 suggest that the variables derived from upper echelons theory alone explain a large proportion of the variance in the dependent variable and are highly comparable with those derived from the three integrated theories. Table 5.6 shows a similar trend with R-squared values ranging from 0.1473 to 0.1721 when using ROE as a dependent variable and R-squareds ranging from 0.1723 to 0.1994. In both instances, model one had the highest R-squared and model two had the lowest R-squared. Further to this, the F-test indicates whether the predicted relationship between the dependent variable and the set of predictors is statistically reliable. The F statistics for all the models show that all of the regression models are significant, with p-values that are zero to four decimal points. In regards to the RMSE, it is an absolute measure of fit that indicates how accurately the model predicts response. As lower values of RMSE indicate a better fit, it is evident in Tables 5.5 and 5.6 that model one has the lowest RMSE in most cases, indicating that this model is a better fit. However, Table 5.6 shows that when using ROE as the dependent variable, model four has the lowest RMSE. These results suggest that model one with the variables derived from this study's theoretical framework is overall a better fitting model than the models with variables from the individual theories.

In order to further assess and compare the four models, the Akaike Information Criteria (AIC) was used. AIC was developed by Akaike (1974) and is one of the most popular techniques used to compare different models based on maximum likelihood. Model selection is important as an over-fitted model may lose generality whist an under-fitted model may not show the true nature of the variability in the dependent variable (Snipes & Taylor, 2014). Akaike (1974) proposed that selection of the best model can be determined by an AIC score, which STATA calculates as follows:

$$AIC = -2*ln\ (likelihood) + 2*k \quad \textbf{(5.1)}$$

Where **k** is the number of parameters estimated and **ln** is the log. AIC is a measure that combines both fit and complexity, whereby fit is calculated negatively by *-2*ln (likelihood)* and complexity is calculated positively by *2*k* (Akaike, 1974). The model with the lowest AIC score is considered the most parsimonious model, that

is, the simplest model with the least assumptions and greatest explanatory power for the given data (Snipes & Taylor, 2014). The results from this measure are presented in Table 5.7. Model one received the lowest AIC scores when using Tobin's Q and ROA as dependent variables (AIC = 2174.474, AIC =6351.608), whereas model four had the lowest AIC score (AIC =7516.514) when using ROE as the dependent variable. However, there is a significant difference in the AIC scores using the different dependent variables and the models that use Tobin's Q have much lower AIC scores. Overall the regression statistics and AIC scores indicate that model one with the variables derived from the study's theoretical framework is the best model for the given data. These findings have several implications on the literature and theoretical perspectives of board diversity and financial performance.

Table 5.7 AIC Results

Model	Dependent Variable	Obs	11(null)	11(model)	df	AIC
1	Tobin's Q	949	-1204.094	-1074.237	13	2174.474
2	Tobin's Q	949	-1204.094	-1099.62	8	2215.240
3	Tobin's Q	949	-1204.094	-1089.308	10	2198.615
4	Tobin's Q	949	-1204.094	-1075.898	12	2175.796
1	ROE	949	-3835.709	-3746.1	13	7518.200
2	ROE	949	-3835.709	-3760.088	8	7536.177
3	ROE	949	-3835.709	-3754.121	10	7528.241
4	ROE	949	-3835.709	-3746.257	12	7516.514
1	ROA	949	-3268.345	-3162.804	13	6351.608
2	ROA	949	-3268.345	-3178.614	8	6373.229
3	ROA	949	-3268.345	-3173.305	10	6366.61
4	ROA	949	-3268.345	-3163.852	12	6351.704

5.6 Discussion of OLS and AIC findings

The weakest model in these findings was model two with the variables derived from agency theory. This is in line with Carter et al. (2003) who suggest that although a board's monitoring function and board independence may improve through a diverse board, agency theory does not provide a clear prediction of the link between board

diversity and financial performance. This is further supported by Hillman and Dalziel (2003) who suggest the main limitation of agency theory is that it has not explicitly considered the board's ability to perform its monitoring function and overlooked the heterogeneity of this monitoring function. Low et al. (2015) suggest that because boards are essential in overcoming agency problems, more emphasis should be placed on incorporating board characteristics, such as diversity, that enhance their monitoring role. Further to this, an incorporation of agency theory allows this study to not only focus on demographic diversity, but also include a focus on structural diversity, which is commonly measured by board independence and CEO duality (Ararat et al., 2015). However, the biggest contribution that agency theory makes to this theoretical framework is that unlike upper echelons theory, it views the most powerful actors and decision makers in an organisation as the board of directors (Hambrick, Misangyi & Park, 2015; Nielsen, 2010). In addition, empirical literature in corporate governance studies has identified that conventional governance variables such as board size, board committees and board independence, are aspects of board structure that should be included when assessing the link between board composition and performance (Ben-Amar & Zeghal, 2011; Clemente & Labat, 2009; Darmadi, 2013). This data was captured in the corporate governance board index that was constructed and derived from agency theory. Therefore, inclusion of agency theory in the theoretical framework provides a more holistic picture of board structure by not only focusing on directors' demographics but also on board practices, procedures and other corporate governance attributes.

Model three with the variables derived from resource dependence theory was neither the weakest nor the strongest model from the tests conducted. Carter et al. (2010) propose that resource dependence perspective offers stronger support for the financial benefits of board diversity than agency theory. Further to this, Carter et al. (2010) suggest that resource dependence theory provides some of the most substantial theoretical arguments for a business case for board diversity. This is primarily because diverse directors are more likely to have unique information and should be able to provide wider access to key constituencies in the external environment. In simpler terms, diverse boards have a wider pool of talent and this may send a positive signal to the market (Carter et al., 2010). This study's findings contradict this proposition,

because although model three was not the weakest, the results show that its R-squared values and AIC scores were much lower than models one and four. Rather, model four with variables from upper echelons theory was the most comparable model to model one with only slightly lower statistics. Nonetheless, resource dependence theory suggests that board diversity can have a positive influence on market valuation by linking an organisation to its external environment (Ntim, 2015). This and other factors discussed in Chapter 3 warrants its inclusion in the theoretical framework. Model four overall had the second greatest explanatory power based on the statistical tests conducted and in some cases, it had slightly higher values than that of model one. These findings imply that upper echelons theory provides a sound theoretical foundation upon which to assess the link between diversity and financial performance. However, its main limitation is that it considers top executives and senior management as the most powerful actors in the organisation (Hambrick, 2007). This assumption omits a broader set of position holders, the board of directors, whom Bhagat and Bolton (2008) state have the ultimate responsibility for the success and performance of a firm. Ararat et al. (2015) note that although boards and top management teams are different with some overlap, research on top management teams, such as upper echelons theory, provides valuable insights into boards as a decision-making group.

5.7 Multivariate Analysis: Research Question 2

This section presents and discusses the regression models used (OLS, 2SLS, GLS) to examine the association between board diversity and financial performance. The OLS model uses robust standard errors to account for the presence of heteroskedasticity in the data, however it was already noted that due to several violations of the classic assumptions of linear regression, OLS was no longer the best linear unbiased estimator. Therefore, the second model uses 2SLS regression with an instrumental variables approach. This model accounts for heteroskedasticity through robust standard errors, and endogeneity using the instrumental variables estimation. Lastly, the GLS model is used for robustness purposes in line with the extant literature that suggests that the GLS estimator is considered the best linear unbiased estimator for β in the presence of autocorrelation and heteroskedasticity (Verbeek, 2008). A series of 12 regressions were conducted to test this study's hypotheses, which focus on testing the association between board diversity attributes and financial performance

for the full sample over the sample period. Financial performance is measured as Tobin's Q and for robustness purposes, ROA and ROE as used as alternative measures of accounting based financial performance. Table 5.8 presents the overall results for the full sample using Tobin's Q as the dependent variable whilst Table 5.9 presents the overall results for the full sample using ROA and ROE as dependent variables. The regression equations were discussed in Chapter 4, and the definitions of the variables were discussed in Chapter 3. The hypotheses developed and tested in the regression analyses were previously presented in Table 5.1.

Table 5.8 Full Sample OLS, 2SLS and GLS results of Tobin's Q

	Model 1 Tobin's Q		**Model 2** Tobin's Q		**Model 3** Tobin's Q	
	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)
Explanatory variables						
AgeDiversity	-.446**	(.206)	-2.337	(1.891)	-.446**	.(202)
GenderDiversity	.012***	(.003)	.012***	(.004)	.012***	(.002)
HighestEducationband	.175***	(.049)	.621	(.397)	.175***	(.047)
EducationDiversity	.229	(.194)	-.557	(.548)	.229	(.206)
HighestExperienceband	.071*	(.038)	-.081	(.068)	.071	(.045)
ExperienceDiversity	.043	(.149)	.286	(.201)	.043	(.141)
Directorships	.138**	(.062)	.979**	(.418)	.138**	(.063)
BoardIndex	.013	(.009)	.009	(.011)	.013*	(.007)
Control Variables						
FirmAge	-.002**	(.001)	-.002**	(.001)	-.002**	(.001)
FirmSize	-.221***	(.013)	-.289***	(.026)	-.221***	(.014)
Firmlev_Wins	-.002	(.001)	-.001	(.002)	-.002**	(.001)
IndDyna_Wins	.006***	(.001)	.006***	(.002)	.006***	(.002)
Number of obs	949		949		949	
Number of groups	24.26				198	
F	0.0000					
Prob > F	0.2394					
R-squared						
Wald chi2(12)			211.10		298.73	
Prob > chi2			0.0000		0.0000	

The sample is based on 198 companies listed on the FTSE 350 and consists of 949 firm-year observations from 2004 to 2014. Model 1 presents the OLS results for all the variables and uses robust standard errors to account for heteroskedasticity. Model 2 presents the 2SLS results for all the variables using an instrumental variables estimation. The instruments used in the 2SLS are total equity, total sales, capital intensity, operating margin, length of operating cycle and sales growth. Model 3 presents the FGLS results for all the data and the model estimates indicate that the data set is homoscedastic and no autocorrelation is present. The dependent variable used is Tobin's Q. The independent and control variables are defined in Table 4.5 of Chapter 4. The coefficients are reported in the unstandardized form. Superscripts ***, ** and * stand for statistical significance based on two-tailed tests at the 1%, 5% and 10% significance levels respectively.

Table 5.9 Full Sample OLS, 2SLS and GLS results of ROE and ROA

	Model 1				Model 2				Model 3			
	ROE		ROA		ROE		ROA		ROE		ROA	
	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)	Coef.	(Std. err.)
Explanatory variables												
AgeDiversity	-6.679**	(3.419)	-4.816**	(1.945)	-53.20	(34.137)	-42.44*	(22.23)	-6.680**	(3.380)	-4.816***	(1.828)
GenderDiversity	.154***	(.045)	.079***	(.023)	.204***	(.074)	.079*	(.046)	.154***	(.047)	.078***	(.025)
HighestEducationband	1.776**	(.825)	1.067**	(.457)	-.683	(8.781)	4.095	(6.062)	1.776**	(.790)	1.067**	(.427)
EducationDiversity	-.156	(3.113)	.422	(1.639)	-.176	(11.076)	-4.740	(7.635)	-.156	(3.438)	.422	(1.860)
HighestExperienceband	.398	(.637)	.108	(.382)	-1.616	(1.343)	-.680	(.720)	.398	(.742)	.108	(.402)
ExperienceDiversity	6.001**	(2.550)	2.368*	(1.364)	9.084***	(3.481)	3.419*	(1.922)	6.001**	(2.348)	2.368*	(1.270)
Directorships	2.506**	(.987)	1.268**	(.568)	12.812	(8.241)	2.982	(4.736)	2.506**	(1.045)	1.268**	(.565)
BoardIndex	.068	(.103)	.095	(.059)	.023	(.146)	.010	(.092)	.068	(.121)	.095	(.065)
Control Variables												
FirmAge	-.036***	(.012)	-.009	(.006)	-.053***	(.018)	-.020**	(.010)	-.036***	(.013)	-.009	(.007)
FirmSize	-2.49***	(.226)	-1.53***	(.120)	-3.44***	(.540)	-2.11***	(.265)	-2.487***	(.237)	-1.525***	(.128)
Firmlev_Wins	-.065***	(.021)	-.050***	(.010)	-.052**	(.026)	-.033**	(.015)	-.065***	(.017)	-.050***	(.009)
IndDyna_Wins	.128***	(.027)	.069***	(.015)	.136***	(.034)	.072***	(.020)	.128***	(.025)	.069***	(.013)
Number of obs	949		949		949		949		949		949	
Number of groups	15.30		18.91						198		198	
F	0.0000		0.0000									
Prob > F	0.1721		0.1994									
R-squared												
Wald chi2(12)					120.37		155.86		197.26		236.40	
Prob > chi2					0.0000		0.0000		0.0000		0.0000	

The sample is based on 198 companies listed on the FTSE 350 and consists of 949 firm-year observations from 2004 to 2014. Model 1 presents the OLS results for all the variables and uses robust standard errors to account for heteroskedasticity. Model 2 presents the 2SLS results for all the variables using an instrumental variables estimation. The instruments used in the 2SLS are total equity, total sales, capital intensity, operating margin, length of operating cycle and sales growth. Model 3 presents the FGLS results for all the data and the model estimates indicate that the data set is homoscedastic and no autocorrelation is present. The dependent variables used are ROE and ROA. The independent and control variables are defined in Table 4.5 of Chapter 4. The coefficients are reported in the unstandardized form. Superscripts ***, ** and * stand for statistical significance based on two-tailed tests at the 1%, 5% and 10% significance levels respectively.

5.7.1 Board Index: Findings and Hypothesis Testing

This study investigates the association between the board index and financial performance from a sample of 198 firms listed on the FTSE 350. Corporate governance scholars have debated in the literature on what are the best methods of empirically measuring the corporate governance quality of a company. In this study, a corporate governance board index was selected as a suitable method as previously discussed in Section 4.4.2 of Chapter 4. The researcher constructed a board index that specifically assesses and measures the actual quality of corporate governance practices of the boards of listed companies in the UK. The association between the board index and financial performance is tested using OLS, 2SLS and GLS regression and the results are presented in Tables 5.8 and 5.9. The results show that there is no significant association between the board index and financial performance using all three dependent variables and in all the three models. Therefore, hypothesis 1 is rejected, the board index is not positively associated with financial performance.

5.7.2 Board Index: Discussion and Literature

One of the most common mechanisms of corporate governance that is researched by scholars is the board of directors as an internal control point that alleviates agency problems and helps companies create value and maximise shareholder wealth (Fama & Jensen, 1983; Mishra & Mohanty, 2014). Rashid (2015) notes that from an agency theory perspective, the primary role of the board is to exercise the governance function and to include independent non-executive directors to who can reduce agency costs by exercising 'decision control' through monitoring managers' decision making and performance. Corporate governance researchers have proposed a variety of ways that improve the monitoring function and capabilities of boards (Hambrick et al., 2015). Prominent proposals in the literature include the proportion of independent non-executive directors, appropriate board size, eliminating CEO duality, the composition and existence of board committees and enhancing directors' accountability (DeFond, Hann & Hu, 2005; Dowell, Shackell & Stuart, 2011; Hambrick et al., 2015; Tuggle et al., 2010). Traditionally corporate governance researchers have measured the relationship of corporate governance and firm performance using either one or more variables of corporate governance mechanisms (Bhagat & Bolton, 2013; Malik & Makhdoom, 2016). Although there is no one best

measure of corporate governance, the use of corporate governance indices has become the most dominant approach in evaluating the quality of a company's corporate governance (Bhagat et al., 2008; Bozec & Bozec, 2012; Da Silva & Leal, 2005; Korent et al., 2014).

This study's findings are surprising as the elements included in the board index[25] reflect different attributes that are considered as good corporate governance practice by the Financial Reporting Council in the UK. The board index specifically addresses the five main principles of the UK Corporate Governance Code 2014, which are leadership, effectiveness, accountability, remuneration and relations with shareholders. Previous governance studies have either used self-constructed corporate governance indices or ones generated by commercial firms (Carvalhal & Nobili, 2011; Epps & Cereola, 2008; Gompers et al., 2003). These studies have produced mixed findings, for instance Black et al. (2006b) examined 525 firms in Korea based on a self-constructed corporate governance (CG) index that included provisions on disclosure, board structure, board procedure and shareholders rights. They found a significant and positive association between their CG index and Tobin's Q using OLS and 2SLS regressions. Similarly, Cheung et al. (2011) examined the corporate governance practices of large listed companies in Hong Kong using a CG index that included sections on disclosure, board responsibilities and equitable treatment of shareholders. Their results provided evidence in support of the notion that good corporate governance can predict future market valuation. In contrast, several scholars have used CG indices to examine the link between corporate governance practices and firm performance and have found no association between the two (Bebchuk et al., 2009; Chen, Chen & Wei, 2009; Diavatopoulos & Fodor, 2016). Price, Román and Rountree (2011) looked at the impact of corporate governance and performance in Mexican firms using a self-constructed index based on the recommendations of the National Banking and Security Exchange Commission. Their regression results showed no association between the CG index and ROA, sales growth and stock returns. Further to this, Price et al. (2011) concluded that compliance to the provisions set out in the code is not associated with improved performance or transparency,

[25] This was described in detail in the methodology chapter; please refer to Section 4.4.2 of Chapter 4.

suggesting that monitoring alone is not sufficient for good corporate governance and greater compliance may force firms to adopt costly measures in order to reduce agency costs. These findings are consistent with this study's findings and their conclusion reinforces one of the biggest limitations of agency theory in focusing solely on the attributes discussed above. That is, agency theory does not focus on the attributes of individuals (directors) who improve the board's effectiveness and monitoring capabilities (Carpenter & Westphal, 2001). Similarly, Fabel (2004) acknowledges that even when directors have the correct links, incentives and power to implement their decisions, they make good or bad decisions because they differ in their capabilities. Considering this, the findings suggest that adherence with the provisions in the Corporate Governance Code alone may not be sufficient to improve monitoring and performance, rather there should be a wider focus on the individual and collective capabilities of directors to provide effective monitoring and improve financial performance.

5.7.3 Age Diversity: Findings and Hypothesis Testing

This study examines the association between age diversity of directors and financial performance from a sample of 198 firms listed on the FTSE 350. Age diversity is measured using Blau's index of diversity. The association is tested using OLS, 2SLS and GLS regressions as presented in Tables 5.8 and 5.9. The results show a significant and negative association between age diversity and Tobin's Q at the 5% significance level in models one and three. These findings are similar when using the accounting based measures ROA and ROE, particularly based on ROA, the association between age diversity and financial performance is negative and significant at 1% in model three and at 5% in model one. Model two does not provide any significant evidence of an association between age diversity and financial performance. However, it is important to note that in Chapter 4 it was identified that age diversity is an endogenous variable; therefore, the most appropriate model to consider in analysing these results would be model two that uses the instrumental variables technique to address endogeneity. Consequently, based on the study's findings, hypothesis 2 is rejected, age diversity on the board of directors is not positively associated with financial performance.

5.7.4 Age Diversity: Discussion and Literature

Literature on age diversity suggests that differences in generations are beneficial to boards as this may prevent groupthink and, from an agency theory perspective, it may lead to more effective monitoring. Ararat et al. (2015) propose that enhanced monitoring by the board can be achieved through a balance of enthusiasm and larger risk appetite that is associated with younger directors, and, the experience and risk averse appetite of older directors. In addition, from a resource dependence and upper echelons perspective, age diversity offers a wide range of perspectives and skills and therefore is a valuable resource upon which firms can draw upon to improve their performance (Li et al., 2011). This is contrary to another stream of literature that suggests companies with older directors perform better because such directors have more experience and in decision-making are less likely to engage in value destroying activities (Nguyen, Hagendorff & Eshraghi, 2015). In line with this, Adams et al. (2015) state that it can be argued that the appointment of younger directors on boards can be detrimental to firm value because younger directors may be more inclined to engage in risky and value-destroying activities. However, Grund and Westergård-Nielsen (2008) argue that younger directors can create shareholder wealth and improve firm performance through their innovative nature, creative ideas and ability to learn new technologies. The literature on age diversity is inconclusive as to which age group of directors is more beneficial on boards. However, this study's theoretical framework proposes a board that consists of a diverse age group should lead to better decision-making through different perspectives and ultimately improve financial performance.

In contrast to the theoretical framework developed in this study, the results found no association between age diversity and financial performance using 2SLS regression and a negative association using GLS regression. These results are in contrast to the findings of several scholars who have examined the relationship between age diversity and financial performance (Darmadi, 2011; Mahadeo et al., 2012; Nguyen et al., 2015). For instance, Kim and Lim (2010) found that greater age diversity of directors was associated with higher firm value in Korea. Letting et al.

(2012) found a significant positive relationship between director's age and ROA using OLS regression. Likewise, Mahadeo et al. (2012) examined the influence of board diversity on financial performance in an emerging economy and found a positive relationship between different age groups of directors and firm performance. Notably, this study's results may be different because the majority of the prior studies stated used OLS regression, which may not be the best linear unbiased estimator when the classic assumptions of linear regression are not met. In addition, the majority of previous corporate governance studies have faced serious endogeneity issues that cannot be addressed by using OLS regression (e.g. Azeez, 2015; Rashid et al., 2010). Therefore, by using a 2SLS regression with instrumental variables, this study addresses the issue of endogeneity and provides more robust results on the link between age diversity and financial performance. This is consistent with Akpan and Amran (2014) who examined Nigerian listed companies and found no relationship between age diverse boards and firm performance. Eulerich, Velte and Van Uum (2014) suggested that a negative relationship between age diversity and performance may be found due to large age differences, which may weaken the decision-making process of the board. The Pearson's correlation matrix in Appendix F shows a significant but negative correlation between age diversity and highest experience band and no correlation between age diversity and experience diversity. This suggests that an age diverse board could lead to lower levels of experience on the board and this could result in a negative effect on financial performance as seen in the GLS regression results. However, in Chapter 4, age diversity was found to be an endogenous variable, therefore the 2SLS results are the most appropriate results. The results suggest that age diversity of directors does not improve nor worsen financial performance, and this may be due to the risk seeking appetite of younger directors being balanced out by the risk averse appetite of older directors.

5.7.5 Gender Diversity: Findings and Hypothesis Testing

This study examines the association between gender diversity on the board of directors and financial performance from a sample of 198 firms listed on the FTSE 350. Gender diversity is measured as the proportion of female directors on the board. The association is tested using OLS, 2SLS and GLS regressions as presented in Tables 5.8 and 5.9. The results show strong evidence of a significant and positive association

between gender diversity and Tobin's Q in all the three models at the 1% significance level. These results are similar when using ROE and ROA as the dependent variables, strong evidence a positive and significant association with gender diversity is found. Therefore, based on the study's findings, hypothesis 3 cannot be rejected, gender diversity on the board of directors is positively associated with financial performance.

5.7.6 Gender Diversity: Discussion and Literature

The extant literature on gender diversity states that female directors can positively contribute to the boards of directors several ways. From agency theory and upper echelons perspectives, it can be argued that gender diversity can improve board monitoring because having directors from various backgrounds adds multiple diversity aspects to the oversight lens and prevents the group think effect (Low et al., 2015). In other words, a diverse board is more likely to challenge the status quo (Yi, 2011). Supporting this view, Adams and Ferreira (2009) argue that female directors have the capability to increase board independence and implement stricter monitoring as they do not belong to the 'old boys club'. In addition, they find improved meeting attendance amongst male directors with more gender diverse boards (Adams & Ferreira, 2009). A different stream of literature states the board of directors represents the interests of stakeholders, some of which have wider expectations than just financial performance (Low et al., 2015). Female directors have been shown to display a greater sensitivity to social and environmental issues; therefore, the presence of female directors on boards can increase social and environmental performance and lead to a better reputation with a wider group of stakeholders (Bear et al., 2010; Branco & Rodrigues, 2008). Consequently, these stakeholders may provide easier access to resources they control which will ultimately have a positive effect on firm value and financial performance (Low et al., 2015). From a resource dependence theory perspective, firms operate in increasingly complex and uncertain environments; therefore, their boards must be composed of diverse individuals who can provide a breadth of resources (Terjesen et al., 2009). Hillman at al. (2007) further state that women have the potential to link firms to different networks or resources from men by virtue of their different skills, values, experiences and beliefs. In light of this, the study's theoretical frameworks proposes that greater gender diversity on boards

enhances and improves financial performance due to the positive contributions female directors make on boards.

This study's findings on the association between gender diversity and financial performance are consistent with the propositions of the study's theoretical framework and with several previous studies. For instance, Adams and Ferreira (2009) found a significant and positive relationship between gender diversity and ROA, whilst Carter et al. (2003) found a positive relationship between firm value and gender diversity. In Mahadeo et al.'s (2012) study, their regression results revealed a strong positive effect on performance of gender-diverse boards relative to boards with no female representation. They further concluded that, in the case of female representation on the board, the impacts of its symbolism might be sufficient to bring significant changes to perspectives in the boardroom, which leads to better performance (Mahadeo et al., 2012). Other studies have documented findings that are contrary to those of this study when examining the association between gender diversity and firm performance. Darmadi (2011) examined a sample of companies listed on the Indonesia Stock Exchange and found a significant but negative association between gender diversity and ROA and Tobin's Q. This is consistent with Lee and James (2007) who found a significant and negative reaction by the stock market to the news of female CEO appointments. A study with data of more than 1,900 companies by Adams and Ferreira (2009) found a negative effect of gender diversity on firm performance when measured using Tobin's Q. Marinova et al. (2016) suggested such negative effects may be due to 'over monitoring' in companies with strong governance which may decrease firm performance. This is contrary to this study's regression results and the descriptive statistics presented in the correlation matrix in Appendix F. The correlation matrix shows a significant and positive correlation between gender diversity and the board index which proxies different corporate governance attributes including accountability and effectiveness of the board. Therefore, the findings suggest that greater gender diversity improves the corporate governance practices of the board, which include effective monitoring.

5.7.7 Directors' Education: Findings and Hypothesis Testing

This study examines the association between directors' education and financial performance from a sample of 198 firms listed on the FTSE 350. The measurement of directors' education in this study was in two parts. First, to assess the directors' education levels, a four-point scale that reflects the highest level of education attained was used and this variable is termed highest education band. Second, to assess the educational diversity of the board the Blau's index for diversity was used, and this variable is termed education diversity. The study employs OLS, 2SLS and GLS regressions and the results are presented in Tables 5.8 and 5.9. The results show a significant and positive association between highest education band and Tobin's Q in models one and three at the 1% significance level. However, in model two, the results show no association between highest education band and financial performance. These results are similar when using the ROA and ROE as dependent variables, there is evidence of a significant and positive association with highest education band in models one and three and no association in model two. Although these findings are contradictory, it is important to note that highest education band was identified as an endogenous variable in Chapter 4; therefore, the most appropriate model to use in this analysis is model two that incorporates the instrumental variables estimation. Considering this, the findings show that there is no association between highest education band and financial performance and therefore hypothesis 4 is rejected. In regards to education diversity, Tables 5.8 and 5.9 show no significant association between education diversity and financial performance when using all three dependent variables and in all three models. Therefore, hypothesis 5 is rejected, the educational diversity of the board of directors is not positively associated with financial performance.

5.7.8 Directors' Education: Discussion and Literature

Literature on directors' education, together with this study's theoretical framework, suggests that director's educational backgrounds can positively contribute to a company's decision-making process. From an agency theory perspective, a highly educated board enhances corporate governance by providing a more effective advisory and monitoring role (Khanna et al., 2014). The business environment, particularly for large firms such as those listed on the FTSE 350, is increasingly complex and therefore

scholars argue that a wide array of knowledge/education can allow the board to tackle complex decisions through an in depth assessment of the implications of those decisions (Mahadeo et al., 2012; Wang et al., 2017). Further to this, Mahadeo et al. (2012) note that most corporate governance codes encourage board committees to have specific strategic-led mandates implying that the board of directors should be drawn from an array of educational backgrounds. Similarly, upper echelons theorists propose that the educational level provides an indication of skill base, human capital and knowledge (Certo, 2003; Hambrick & Mason, 1984). Hambrick and Mason's (1984) earliest upper echelon model recognised that one's formal educational background might yield rich information. Therefore, to some extent, the skills and knowledge base of a person can be reflected through their educational background and qualifications (Hambrick & Mason, 1984). Individuals with higher education levels are assumed to have higher intellectual potential and tend to give more reasons and objectives in the decision making process and this in turn improves firm performance (Zhihua, 2010). Similarly, other scholars in the upper echelon field contend that the directors' education level can affect a board's reputation and prestige (D'Aveni 1990; Johnson, Hoskisson & Hitt, 1993). Certo (2003) suggests that highly educated directors can enhance the board's prestige and its organisational legitimacy. Wang et al. (2017) note that several studies show that a company's perceived legitimacy can allow the managers and directors to influence the perceptions of stakeholders and acquire resources that are key to a company's survival. For instance, Mizruchi (1996) found that highly educated directors can signal to investors the legitimacy and prestige of the company and reduce the cost of external capital which then improves firm performance. This is consistent with resource dependence theory perspective as acquiring lower external finance is one way that highly educated directors can expand their firms' boundaries through linkages to important external resources as evidenced by Mizruchi (1996) and Wang et al. (2017).

The results from the 2SLS estimation for highest education band and from all three models for educational diversity are largely inconsistent with the literature and with the study's theoretical framework. Several scholars who have examined the association between director's education and financial performance have found a positive association. For instance, Nguyen et al. (2015) found that the education of

executive directors in the US banking sector was positively and significantly related to stock market returns. Several other studies show that directors' educational level is positively and significantly associated with firm performance because of their expertise and more effective monitoring (Akpan & Amran, 2014; Khanna et al., 2014; Reeb & Zhao, 2013; Yermack, 2006). Phenomenal work in this area from an earlier study by Bantel (1993) found that greater diversity in educational backgrounds of the top management teams in the banking industry led to better strategic decision-making, which led to improved performance. However, the results from Mahadeo et al.'s (2014) study challenge the findings of Bantel (1993) as they found boards that selected a higher mix of educational backgrounds experienced lower firm performance. The descriptive statistics in Table 5.4 show that the mean value of education diversity across the sample period was 0.501, which is moderately diverse, and the minimum value for education diversity was 0 in some years, indicating that some boards of directors had similar educational backgrounds. These findings together with the regression results suggest that educational diversity and the highest education bands of directors neither improves nor worsens financial performance. The study's findings may differ to other studies due to differences in the measurement of directors' education. For instance, Khanna et al. (2014), measure directors' education as the number of years of schooling whereas Akpan and Amran (2014) use the percentage of directors on the board with a Master's degree or a Doctorate as a proxy of directors' education.

5.7.9 Experience Diversity: Findings and Hypothesis Testing

This study examines the association between directors' experience and financial performance from a sample of 198 firms listed on the FTSE 350. The measurement of directors' experience in this study was in two parts. First, a four-point scale that reflects the highest previous positions held was used in order to assess the directors' previous experience and this variable is termed highest experience band. Second, in order to assess the diversity of experience of directors, the Blau's index for diversity was used and this variable is termed experience diversity. The study employs OLS, 2SLS and GLS regressions and the results are presented in Tables 5.8 and 5.9. The results do not provide any significant evidence of an association between highest experience band and financial performance in all three models and when using Tobin's

Q, ROE and ROA as dependent variables. Therefore, hypothesis 6 is rejected; the experience level of directors is not positively associated with financial performance. In regards to experience diversity, the results show no significant association with financial performance in all three models when using Tobin's Q as a dependent variable. In contrast, when using ROE as the dependent variable, there is a positive and significant association between experience diversity and financial performance at the 5% significance level in models one and three and at the 1% significance level in model two. When using ROA, the results display weak evidence of a positive association with experience diversity. Therefore, taking into account the accounting based measures of performance, hypothesis 7 cannot be rejected, the experience diversity of directors is positively associated with financial performance.

5.7.10 Experience Diversity: Discussion and Literature

The extant literature and this study's theoretical framework proposes that the experience of directors on the board enhances the decision making process and improves financial performance. From an agency theory perspective, directors with suitable knowledge gained through experience will not only be better monitors, but will also be useful advisors to top managers (Hillman & Dalziel, 2003). Resource dependence theory views director experience as a vital intangible resource that is more likely to produce competitive advantage due to experience being unique and hard to imitate (Crook et al., 2011). Furthermore, upper echelons scholars suggest that senior executives carry essential and unique skills that are displayed through their perceptions and beliefs, and these perceptions and beliefs are ultimately based on executives' experiences (Nielsen & Nielsen, 2013). Hambrick (2007) also states that executives' idiosyncratic experiences influence their strategic choices, decision making and performance levels, particularly in complex issues such as those faced by large corporations. Therefore, boards of directors who do not have relevant and suitable experience may be incapable of fully contributing to the strategic decision making of a firm (Kroll et al., 2008). It is important to note that previous studies have used different measures as proxies of prior experience as discussed previously in the theoretical framework chapter. This study uses previous experience as a director and incorporates the functional background of directors in the four-point scale constructed. Phenomenal work by Fama (1980) and Fama and Jensen (1983) suggests that there

are unique skill sets and managerial abilities that are acquired by individuals with previous experience as directors that sets them apart from other individuals. Further to this, directors with previous executive experience exhibit a better understanding of international markets, expansion strategies and associated risks and such knowledge leads to better decision making (Volonté & Gantenbein, 2016). Therefore previous experience as a director in listed companies can signal a director's proven track record, accomplishments and social ties and networks with other companies (Nguyen et al., 2015).

This study's findings on the association between highest experience band and financial performance are inconsistent with the study's theoretical framework. However, the findings on the association between experience diversity and financial performance are consistent with the theoretical framework. This is reflective of prior studies as the empirical evidence on the relationship between director experience and financial performance is mixed. Previous studies in management literature have examined the impact of director experience on different aspects of firm performance. For instance, a study by Fich (2005) revealed that shareholders react positively to the appointment of non-executive directors with past CEO experience in other firms. Gray and Nowland (2013) found that both the depth and breadth of directors' prior experience is valued by the market at the time of the directors' appointment. Custodio and Metzger (2013) examined merger and acquisition activity and found that when the CEO of the acquiring firm had experience working in the target industry, the acquiring company would experience higher announcement returns. This indicates that the stock market values the prior experience of directors (Custodio & Metzger, 2013). Similarly, Nguyen et al. (2015) looked at market responses to announcements of new executive directors and found that the prior experience of executive directors was positively and significantly related to stock market returns. In contrast, Fahlenbrach, Low and Stulz (2010) found evidence that rejected the claim that the stock market reacts positively when former CEOs are appointed as directors. In addition, consistent with this study's findings on higher experience levels, Stevenson and Radin (2009) found no significant relationship between previous CEO or director experience on the board and the decisions of the firm. It is also possible that higher experience levels may only need to reach a critical mass and anything after that may not contribute anything to

performance. In addition, when directors all have similar levels of experience, the element of diverse perspectives enhancing the decision-making process would be lost. Conversely, the study's findings of a positive association between experience diversity and financial performance support the literature that states directors with diverse experience are able to look at problems from different perspectives and consider different aspects of the issues (Jhunjhunwala & Mishra, 2012).

5.7.11 Multiple Directorships: Findings and Hypothesis Testing

This study investigates the association between multiple directorships and financial performance from a sample of 198 firms listed on the FTSE 350. Multiple directorships in this study are a proxy of directors' networks and ties and are measured as the average number of directorships held by each director on the board. The association is tested using OLS, 2SLS and GLS regression and the results are presented in Tables 5.8 and 5.9. The results show a significant and positive association between multiple directorships and Tobin's Q in all three models at the 5% significance level. These results are similar when using ROA and ROE as dependent variables, there is a positive and significant association between multiple directorships and financial performance at the 5% significance level in models one and three. However, in model two there is no association between multiple directorships and financial performance when using ROE and ROA as dependent variables. Notably, the variable multiple directorships was identified as endogenous variable in Chapter 4, therefore the most appropriate model to use in interpreting the results is model two that incorporates the instrumental variables estimation. Considering this, the findings display that there is a significant and positive association between multiple directorships and market based measures of performance rather than accounting based measures. Hypothesis 8 cannot be rejected, multiple directorships on the board of directors are positively associated with financial performance.

5.7.12 Multiple Directorships: Discussion and Literature

There are different theoretical views on multiple directorships and director effectiveness; however, this study's theoretical framework predicts that multiple directorships will have a positive impact on financial performance. Multiple

directorships are common in listed companies in the UK, directors who occupy board positions in other firms are able to create valuable connections for themselves and for the company (Renneboog & Zhao, 2014). This line of thinking is consistent with this study's findings and is predominantly from a resource dependence theory perspective as well as is in line with propositions of upper echelons theory about human capital. The main argument is that the networks and ties of directors through multiple directorships, provide better access to information which is beneficial to the firm in decision-making (Renneboog & Zhao, 2014). Further to this, Kor and Sundaramurthy (2008) state that directors with external ties and networks have greater social and human capital as they have quicker access to timely information, have a higher status, have critical resources and ideas that are more diverse. Other scholars maintain the view that directors with multiple directorships possess relevant knowledge and expertise, which can be industry specific, and this is beneficial to companies (Grove et al., 2011). Consequently, Adams et al. (2015) note that some boards choose directors with such directorships due to their high ability and their capacity to deal with uncertainty through leveraging network (interlock) resources (Martin, Gözübüyük & Becerra, 2015).

From an agency theory perspective, interlocking directorate ties can help directors to gain relevant strategic knowledge and perspectives that enable them to be more effective in their monitoring and advisory roles (Chen et al., 2016). Similarly, some scholars propose that multiple directorships endorse a director's reputation as an expert in advising and monitoring. This suggests that boards with multiple directorships can add value to a company through their certified human capital (Liu & Paul, 2015). In addition, Fama and Jensen (1983) state that multiple directorships are a good signal of director quality, as better quality directors are more likely to serve on numerous boards. A different stream of literature looks at the over-commitment view of multiple directorships and argues that competing pressures from numerous board appointments creates "busy" directors that compromise firm performance (Nguyen et al., 2015). This line of thinking contends that serving on a corporate board requires a significant amount of time and effort, therefore 'busy' directors are at risk of being too busy to be effective in their advisory and monitoring roles, which in turn, negatively impacts firm performance (Liu & Paul, 2015). This view supports the theoretical

arguments in Jensen and Meckling (1976) of a residual loss due to difficult contracting. The National Association of Directors in 2005 recommended that boards should limit the number of additional directorships in order to fully commit to providing an outstanding service (National Association of Corporate Directors, 2005).

This study's findings are consistent with the propositions of the theoretical framework, particularly from a resource dependence theory perspective. This is because, in the 2SLS regression, the results show a positive and significant association with market based measures of performance rather than accounting based measures thus reflecting that multiple directorships are a good signal of director quality that is valued by the market. Previous studies that have examined the link between multiple directorships and performance have produced inconsistent findings. Numerous studies have found strong evidence that multiple directorships are associated with increased firm value and improved firm performance (Geletkanycz & Boyd, 2011; Larcker et al., 2013; Zaheer & Bell, 2005). These studies conclude that multiple directorships result in improved financial reporting quality and allow directors to gain valuable industry knowledge and expertise that can make them more effective in monitoring and advising. Consistent with this, Field, Lowry and Mkrtchyan (2013) found that directors with multiple directorships have a positive contribution to the firm value of firms that need sophisticated advisory services. Other scholars have investigated the stock market's reaction on the appointment of directors with multiple directorships. For instance, in Australia, a study by Gray and Nowland (2017) found a positive reaction from shareholders on the appointment of directors with other directorships. In a similar vein, Masulis and Mobbs (2011) found that firms with inside directors that have multiple directorships make better acquisition decisions that those with inside directors with no external directorships. They further found evidence that the stock market reacts positively to multiple directorships and this improves shareholder wealth (Masulis & Mobbs, 2011). Other studies have highlighted and evidenced negative consequences of multiple directorships including excessive CEO remuneration, less effective monitoring and lower firm performance (Fich & Shivdasani, 2006; Jiraporn et al., 2009; Méndez, Pathan & García, 2015). These scholars have criticised directors with multiple directorships for being too busy to effectively perform their monitoring and advisory roles. For instance, Sharma and Iselin (2012) found a significant and

positive association between multiple directorships of audit committee members and financial misstatements after Sarbanes-Oxley reform. On the other hand, Falato, Kadyrzhanova and Lel (2014) found a negative reaction from the stock market to an increase of multiple directorships and they concluded that markets perceive 'busy' directors as being detrimental to firm value. Similarly Adams et al. (2015) note that the appointment of executive directors with multiple directorships results in negative returns because investors expect busy executives to perform worse than more committed executives. Contrary to this, the correlation matrix in Appendix F displays a strong and positive correlation between directorships and the board index, which included sections on director attendance and leadership. This finding suggests that multiple directorships do not negatively affect the commitment of directors to the firm; rather they enhance corporate governance practices.

5.8 Market Measures versus Accounting Measures of Financial Performance

Khanna et al. (2014) noted that in corporate governance research, firm performance is better represented in accounting based measures such as ROA and ROE. This is because accounting based measures indicate the effectiveness of the governance of a firm whilst market based measures are based on investors' perceptions (Khanna et al., 2014). However, Ntim (2015) notes that there is no agreement amongst corporate governance researchers as to which is the best measurement of financial performance. This study uses both accounting based measures and market based measures in order to allow for robustness when checking the findings. Table 5.9 presented the regression results using ROE and ROA as alternative proxies for financial performance. In models one, two and three, the results are very similar to the regressions using Tobin's Q. However, experience diversity only had a positive and significant association with ROE and ROA and no association with Tobin's Q. This suggests that experience diversity only impacts accounting based measures of performance which better represent what the company is actually doing, rather than the market's perception. This is in line with Karmadin and Haron (2011) who note that accounting based measures are more appropriate for investigating the agency costs on performance, and experience diversity presents a wider range of knowledge and skills that is vital for complex firms and effective monitoring (Mahadeo et al., 2012).

Notably, in model two, the variable multiple directorships which is an endogenous variable only has a significant and positive association with Tobin's Q. This is consistent with the literature that states that directors' external networks are associated with prestige, visibility and reputation making directors' networks a vital resource for firm legitimacy (Nicholson & Kiel, 2007). Therefore, the impact of the directors' external ties are better represented in a market based measure of performance, such as Tobin's Q, rather than accounting based measures. Azeez (2015) notes that it is unlikely that one performance indicator could sufficiently capture the governance-performance link, and this study's results demonstrate that the use of alternative measures of performance was necessary, as accounting based measures and market based measures can capture different aspects of governance. In addition, the study's findings contribute to knowledge by providing empirical evidence that director's networks have a positive impact on the value of the firm as represented in Tobin's Q. Experience diversity enhances the effectiveness of the board in performing their roles and duties as represented in the accounting based measures of performance.

5.9 Control Variables

With respect to the control variables, based on the market based measure, Tobin's Q, there is a significant but negative association between the control variables firm age and firm size in all the models. However, firm leverage has a significant and negative association with Tobin's Q in model three only. These results are similar when using ROE and ROA as dependent variables, there is a significant and negative association between firm age, firm size and firm leverage at both the 1% and 5% significance levels. These findings are consistent with previous literature that has found a negative association between these variables and firm performance (Haniffa & Hudaib, 2006; Jackling & Johl, 2009). In contrast, other studies have found a positive association between these control variables and firm performance (Azeez, 2015; Shan & McIver, 2011). In regards to firm size, the findings contradict the stream of literature that suggests larger firms enjoy economies of scale and specialisation and therefore predict a positive relationship between firm size and performance (Al-Malkawi & Pillai, 2013; Fallatah & Dickins, 2012). However, Klapper and Love

(2004) note that larger companies may also have more agency problems and incur inefficiencies that may lead to poor performance.

Marinova et al. (2016) find a negative association between firm age and firm performance and contend that this may be due to the weakening ability over time of firms to compete. In addition, Pillai and Al-Malkawi (2018) note that older firms are associated with larger boards, degenerated governance policies and obsolescence in assets which can all pave the way for a negative financial performance. Furthermore, Pillai and Al-Malkawi (2018) document a negative relationship between firm leverage and firm performance and Azeez (2015) notes that this may be due to debt reducing the free cash flow and thus affecting company performance. In order to control for industry effects, this study uses industry dynamism as a control variable. Dynamism refers to the level of environmental predictability and, is exhibited in the variance in the rate of market and industry change, and the level of uncertainty about forces that are beyond the individual company's control (Robert-Baum & Wally, 2003). The regression results in Tables 5.8 and 5.9 show that industry dynamism is significantly and positively associated with Tobin's Q, ROE and ROA in all the models at the 1% significance level. These results are consistent with Henderson et al. (2006) who found that any potential improvements in firm performance were contingent on the dynamism of the industry and the external environment.

5.10 Contribution to Knowledge

The findings presented and discussed in this chapter contribute to the extant literature and existing body of knowledge in several ways. First, this study contributes to the extant literature by integrating agency, resource dependence and upper echelons theories, which helps in overcoming a current myopia within the three streams of research based on a single theory perspective. In addition, the provision of a multi-theory perspective enables the study to provide a more complete understanding of the link between board diversity and financial performance. The findings in Section 5.5 display evidence of the benefits of adopting such an interdisciplinary set of theories and contribute to the extant literature in several ways. Specifically, the AIC scores and R-squared values show that the most parsimonious model was found when using

Tobin's Q as the dependent variable. This contributes to the ongoing debate in literature as to which is the best measure of financial performance by suggesting that when assessing the link between board diversity and financial performance, Tobin's Q is a better indicator of performance. In addition, many proponents of board diversity predominantly base their arguments on resource dependence theory, however this study's findings suggest that an adaptation of upper echelons theory offers a better theoretical perspective of board diversity. However, overall this study confirms the need to utilise theoretical paradigms that combine two or more theories when assessing the link between board diversity and financial performance, in this case, the researcher proposes an integration of agency, resource dependence and upper echelons theories.

Second, the findings from the board index also add to the existing body of literature in several ways. The researcher constructed a corporate governance board index that is a comprehensive measure of the board practices of listed companies in the UK. Cheung et al. (2011) noted that previous corporate governance studies employed indices that were biased towards the US market and this meant it had little applicability in other markets. Conversely, Bhagat et al. (2008) noted that some governance indices and ratings do not take into account country differences and firm specific circumstances. Therefore, in line with Bozec and Bozec's (2012) recommendations, this study's board index selects governance provisions that are relevant and tailored to the study's sample. In addition, the board index takes into account several corporate governance board measures that go beyond the measurement of conventional governance variables, such as board size and board independence. Further to this, the study adds to the literature by using a comprehensive and robust econometric approach that takes into account the endogenous nature of the relation between corporate governance and performance in order to address the limitations of previous corporate governance research as stated in the literature (De Andres & Vallelado, 2008; Wintoki et al., 2012). This study further adds to the large body of literature that has explored the link between corporate governance practices and firm performance by providing more empirical evidence of no association

between the board index and financial performance from a sample of listed companies in the UK.[26]

Third, academic research on board diversity has predominantly focused on studying gender diversity and often assumes that the findings from one dimension of demographic diversity can be applied to other dimensions of demographic diversity (Li et al., 2011). Therefore, Li et al. (2011) called for researchers to provide more empirical evidence on the effect of age diversity on performance, in order to contribute to developing theories regarding organisational demography. This study extends prior work on board diversity by examining the link between age diversity and financial performance on sample of firms listed on the FTSE 350. The study contributes to the existing body of literature by first providing evidence that age diversity is an endogenous variable that needs to be examined using an estimation technique that addresses endogeneity. Through addressing this, the study provides empirical evidence that the age diversity of directors has no association with financial performance and concludes that this may be due to a 'trade off' between the risk loving appetite of younger directors and risk averse appetite of older directors.

Fourth, with regards to gender diversity the findings presented in this chapter displayed strong evidence of a positive association between gender diversity and different measures of financial performance in a sample of UK firms. This not only provides more positive results in the European context, it also provides strong support for the business case for diversity and the propositions of the European Commission. The European Commission has noted that the progress of greater gender diversity on boards has been slow and proposed that the European legislation speeds up so that by 2020 40% of non-executive director positions on boards are filled by women in publicly listed companies (European Commission, 2012b). The descriptive statistics in Table 5.3 show that although the yearly average percentage of gender diversity increased over the sample period, the mean in 2012 was 14.729%. Although the

[26] Further analysis was conducted on the separate sections of the board index to determine if there were any sections that were associated with financial performance. The results are presented in Appendix I and they do not show many significant results. The only significance found was a positive association between shareholder relations and financial performance.

maximum value was 44.44% in 2012 the minimum value was 0% indicating that some companies still had no female representation on their boards. The proposal by the European Commission (2012a) is not only motivated by equality concerns but also refers to the business case, citing that gender diversity on boards is a key driver of firm performance. However, in contrast to this, Marinova et al. (2016) noted that the majority of research in European countries depicts negative results on the relationship between gender diversity and financial performance. Further to this, Low et al. (2015) note that despite strong theoretical support for gender diversity on boards, the empirical evidence is still largely mixed. Some scholars attribute the mixed findings to poor estimation methods, failure to account for endogeneity and lack of control factors such as controlling for firm size and firm leverage (Campbell & Minguez-Vera, 2008; Wang & Clift, 2009). Therefore, this study also contributes to the existing body of literature on board gender diversity and financial performance by addressing key methodological issues in the analysis which include using appropriate controls and employing two stage least squares regression that addresses the issue of endogeneity. Accordingly, the use of three estimation techniques that address the econometric issues found in the data provides results that are more robust.

Fifth, Wang et al. (2017) note that directors' education has received insufficient scholarly attention, and suggest that given the challenges in identifying and measuring board effectiveness, directors' education is essential in studying governance mechanisms because it is relatively observable and objective. Therefore, together with Terjesen et al. (2016), they call for researchers to investigate other types of diversity, including education, in order to extend the research on observable and non-observable diversity in the boardroom. This study responds to these calls and is an extension of the research on board diversity and firm performance. The study extends prior work by examining directors' education from two perspectives. On one hand, the highest education levels of directors is examined, and on the other hand, the educational diversity of directors is examined. The results from this study contribute to the existing body of knowledge by providing empirical evidence that the education diversity and higher levels of education on the board of directors have no impact on financial performance. When comparing educational diversity and highest education band, a meta-analysis conducted by Bell et al. (2011) showed that educational level

was a better predictor of cognitive bases than educational diversity in top management team research. However, Ararat et al. (2015) argue that educational diversity should lead to more diverse perspectives in the decision-making process. The results from this study do not display which measure of directors' education is a better predictor of directors' skills and cognitive bases as both measures show no association with financial performance. These results support the work of Mahadeo et al. (2012) who proposed that prior educational background may not fully show a director's expertise and experience as some directors engage in occupations that do not have much in common with their academic studies. This line of thinking would then predict no association between director's education and financial performance.

Sixth, this thesis contributes to the existing body of literature on the link between director experience and financial performance by providing evidence that when measuring director experience through previous appointments, there is no association between the experience level of directors and financial performance. In regards to experience diversity, the study's findings provide evidence that experience diversity on the board improves the accounting based measures of financial performance rather than the market-based measure. This is consistent with Khanna et al. (2014) who note that accounting based measures of performance are better indicators of the effectiveness of corporate governance practices than market-based measures which reflect investor's perception. In light of this, the study concludes that the experience diversity of the board may not be a signal of director quality or reputation to the market, rather it is a measure that reflects the skills that directors bring to their jobs and it reflects the effectiveness of directors in their roles, which ultimately leads to improved performance.

Finally, the findings on the association between multiple directorships and financial performance in this study provide empirical evidence that disproves the 'busyness hypothesis' of directors' external ties and that proposes a negative impact on performance. Rather, this study supports the notion that multiple directorships produce high quality directors who are more effective in their monitoring role, are valuable resources to the company and who improve financial performance. The

correlation matrix in Appendix F shows a strong and positive correlation between the variable directorships and highest education band and highest experience band. This suggests that directors with multiple directorships have more educational qualifications and more experience, which may be attributes of high quality directors as noted by Fama and Jensen (1983). Martin et al. (2015) noted that previous studies that have examined the association between multiple directorships and performance have been criticised for not accounting for endogeneity in their analysis. This study identified that the variable multiple directorships is an endogenous variable, therefore it contributes to and extends prior work by providing more empirical evidence that confirms a significant and positive association between multiple directorships and financial performance using a rigorous methodology that accounts for endogeneity.

5.11 Summary of Chapter

This chapter has presented and discussed the descriptive statistics for the dependent, independent and control variables. In addition, the regression results that address research questions 1 and 2 were presented and discussed. In addressing research question 1, the study's results displayed that the model with the variables derived from the theoretical framework was the strongest. Therefore, there was a need to combine agency, resource dependence and upper echelons theory to offer a multi-theory perspective on board diversity. In regards to research question 2, the results displayed that a positive association was found between gender diversity, experience diversity, multiple directorships and financial performance. No association was found between age diversity, highest education level, education diversity, highest experience level, the board index and financial performance. The chapter discussed the various implications of these findings to the existing body of knowledge and to practice. For instance, the positive association between gender diversity and financial performance supports the business case for diversity in the boardroom and is consistent with the propositions of the European Commission. Table 5.10 presents a summary of the study's findings. The next chapter presents the regression results when the companies are grouped into industry sectors in order to analyse industry differences amongst the sample.

Table 5.10 Summary of Hypothesis Findings

	Research Hypotheses							
Dependent Variable	**H1** (Board Index)	**H2** (Age Diversity)	**H3** (Gender Diversity)	**H4** (Education Level)	**H5** (Education Diversity)	**H6** (Experience Level)	**H7** (Experience Diversity)	**H8** (Multiple Directorships)
Tobin's Q	rejected*	rejected	**confirmed**	rejected	rejected	rejected*	rejected	**confirmed**
ROE	rejected	rejected	**confirmed**	rejected	rejected	rejected	**confirmed**	rejected
ROA	rejected	rejected	**confirmed**	rejected	rejected	rejected	rejected*****	rejected

*there is evidence of an association at the 10% significance level.

CHAPTER 6 INDUSTRY ANALYSIS

6.1 Introduction to Chapter

This chapter presents and discusses the findings that address research question 3: *does the relationship between board diversity and financial performance differ amongst industries*? The multivariate analysis presented in this chapter examines and presents different regression models based on the ordinary least squares regression (OLS), two stage least squares regression (2SLS) and generalised least squares regression (GLS) for each industry sector. The main dependent variable used to measure financial performance in this study is Tobin's Q, however, alternative measures of financial performance are also used for robustness purposes, namely ROA and ROE. The study's sample is broken down by industry according to SIC codes, which classify companies in industry sectors according to the economic activities that the companies are engaged in. Industry sectors with closely linked SIC codes and similar economic activities were merged together and this is displayed in Appendix B. The full results for each industry sector are presented in Appendix J and Tables 6.2, 6.3 and 6.4 show a summary of the industry findings by presenting the association found for each independent variable in each industry.

The chapter is organised as follows: Sections 6.2 to 6.9 discuss the industry findings on the board index, age diversity, gender diversity, highest education band, education diversity, highest experience band, experience diversity and multiple directorships respectively. Each of these sections will present the key industry findings, discuss the main literature and apply the literature to the findings. Section 6.10 discusses the overall industry analysis and the contribution to knowledge and to practice and lastly, Section 6.11 summarises the main results and key points from this chapter. Table 6.1 presents a summary of the hypotheses formulated for the industry analysis.

Table 6.1 Summary of Hypotheses Addressing Research Question 3

Research Question	Hypotheses
Does the relationship between board diversity and financial performance differ amongst industries?	***Hypothesis 9.*** *The association between the board index and financial performance differs between industries.* ***Hypothesis 10.*** *The association between age diversity of the board of directors and financial performance differs between industries.* ***Hypothesis 11.*** *The association between gender diversity of the board of directors and financial performance differs between industries.* ***Hypothesis 12.*** *The association between education levels of the board of directors and financial performance differs between industries.* ***Hypothesis 13.*** *The association between education diversity of the board of directors and financial performance differs between industries.* ***Hypothesis 14.*** *The association between experience levels of the board of directors and financial performance differs between industries.* ***Hypothesis 15.*** *The association between experience diversity of the board of directors and financial performance differs between industries.* ***Hypothesis 16.*** *The association between Multiple directorships on the board of directors and financial performance differs between industries.*

Table 6.2 Summary of Industry Analysis Findings using Tobin's Q

Industry	Board Index	Age Diversity	Gender Diversity	Highest Education Band	Education Diversity	Highest Experience Band	Experience Diversity	Directorships
Accommodation, Food and Beverages Services	positive **	none	positive **	none	negative **	positive**	none	none
Banking	none	none	none	none	none	none	none	none
Business Support, Leasing, Employment, Public Administration Activities	positive ***	none	none	none	none	negative **	none	none
Construction and Development of Buildings	none	none	none	none	positive **	positive ***	negative **	none
Electricity, Gas, Water collection and Sewerage	none	none	positive **	positive **	none	-	none	none
Extraction of Crude Petroleum and Natural Gas	none	none	none	none	none	none	positive **	positive **
Financial Services, Auxiliary Services to Finance and Real Estate Activities	negative **	none*	none	none	none	none	none	none
Insurance	none	none	negative **	none*	none	none	positive ***	none
IT, Media, Broadcasting and Publishing	positive ***	none	negative **	none	negative ***	positive ***	none	none
Management Consultancy, Head Offices Activities, Architectural and Engineering Services	none	negative ***	none	none	none	none	positive **	none*
Manufacturing	positive **	none	positive ***	positive ***	none	none	none	positive **
Mining and Quarrying	none	positive ***	positive ***	positive **	positive **	positive ***	positive ***	none
Retail Sales, Gaming and Betting Activities	none	negative **	positive ***	none	none	none	positive ***	none
Telecommunications	none	none	none	none	none	none	none	none
Transport	none	none*	positive ***	none	none	none	positive ***	none
Wholesale	none	negative **	positive **	positive **	none	none	none	none

The table shows a summary of the association between each of the independent variables and financial performance in each industry using Tobin's Q as the dependent variable. The independent variables are defined in Table 4.5 of Chapter 4. Positive depicts a positive association; negative depicts a negative association whereas none depicts no association. Superscripts ***, ** and * stand for statistical significance based on two-tailed tests at the 1%, 5% and 10% significance levels respectively. The 10% significance level displays weak evidence of an association, therefore the study concludes that there is no association between the variables at this significance level.

Table 6.3 Summary of Industry Analysis Findings using ROE

Industry	*Board Index*	*Age Diversity*	*Gender Diversity*	*Highest Education Band*	*Education Diversity*	*Highest Experience Band*	*Experience Diversity*	*Directorships*
Accommodation, Food and Beverages Services	positive **	none	positive **	none	none	positive ***	none	none
Banking	none	none	none	none	none	none	none	none
Business Support, Leasing, Employment, Public Administration	none	none	none	none	none	negative **	none	none
Construction and Development of Buildings	none	none	none	none	none	none	none	none
Electricity, Gas, Water collection and Sewerage	none	none	negative **	none	none	none	none	negative ***
Extraction of Crude Petroleum and Natural Gas	none	none *	negative **	none	none	none	none	none
Financial Services, Auxiliary Services to Finance and Real Estate	none	none *	none	none	negative **	negative **	none	none
Insurance	none	none	none	none	none	none	negative **	none
IT, Media, Broadcasting and Publishing	none	none	none	none	none	positive **	positive **	none
Management Consultancy, Head Offices Activities, Architectural and Engineering Services	none *	negative ***	none *	none	positive **	none	positive ***	none
Manufacturing	none	none	none	positive ***	none	none *	none	none
Mining and Quarrying	none *	none	none	none	none	none	positive **	none
Retail Sales, Gaming and Betting Activities	none	none	none *	none	none *	none	positive ***	negative **
Telecommunications	none	none	none	none	none	none	none	none
Transport	none	negative ***	positive ***	none *	positive **	none	none	none
Wholesale	none	none	positive **	none	none	positive **	none	none

The table shows a summary of the association between each of the independent variables and financial performance in each industry using ROE as the dependent variable. The independent variables are defined in Table 4.5 of Chapter 4. Positive depicts a positive association; negative depicts a negative association whereas none depicts no association. Superscripts ***, ** and * stand for statistical significance based on two-tailed tests at the 1%, 5% and 10% significance levels respectively. The 10% significance level displays weak evidence of an association, therefore the study concludes that there is no association between the variables at this significance level.

Table 6.4 Summary of Industry Analysis Findings using ROA

Industry	*Board Index*	*Age Diversity*	*Gender Diversity*	*Highest Education Band*	*Education Diversity*	*Highest Experience Band*	*Experience Diversity*	*Directorships*
Accommodation, Food and Beverages Services	none	none	positive **	none	none	positive ***	none	none
Banking	none	none	none	none	none	none	none	none
Business Support, Leasing, Employment, Public Administration	positive **	none	none	none	none	none*	none	none
Construction and Development of Buildings	positive **	none	none	none	none	negative **	none*	none
Electricity, Gas, Water collection and Sewerage	none	none	negative ***	none	none	none	none	negative ***
Extraction of Crude Petroleum and Natural Gas	none	none	negative **	none	none	none	none	none
Financial Services, Auxiliary Services to Finance and Real Estate Activities	none	none	none	none	none	none	none	none
Insurance	none	positive **	none*	none	none	none	negative ***	none
IT, Media, Broadcasting and Publishing	none	none	none	none	none	positive **	positive ***	none
Management Consultancy, Head Offices Activities, Architectural and Engineering Services	none	negative **	none	negative **	none	none	none	none
Manufacturing	positive ***	none	none	positive ***	none	negative ***	none	none
Mining and Quarrying	none	none	none	none	none	none	positive ***	none
Retail Sales, Gaming and Betting Activities	none	none	none	none	none	none	positive ***	negative **
Telecommunications	none	none	none	none	none	none	none	none
Transport	none	negative **	positive ***	negative ***	positive **	none	none	none
Wholesale	none	none	none*	none	none	none*	none	none

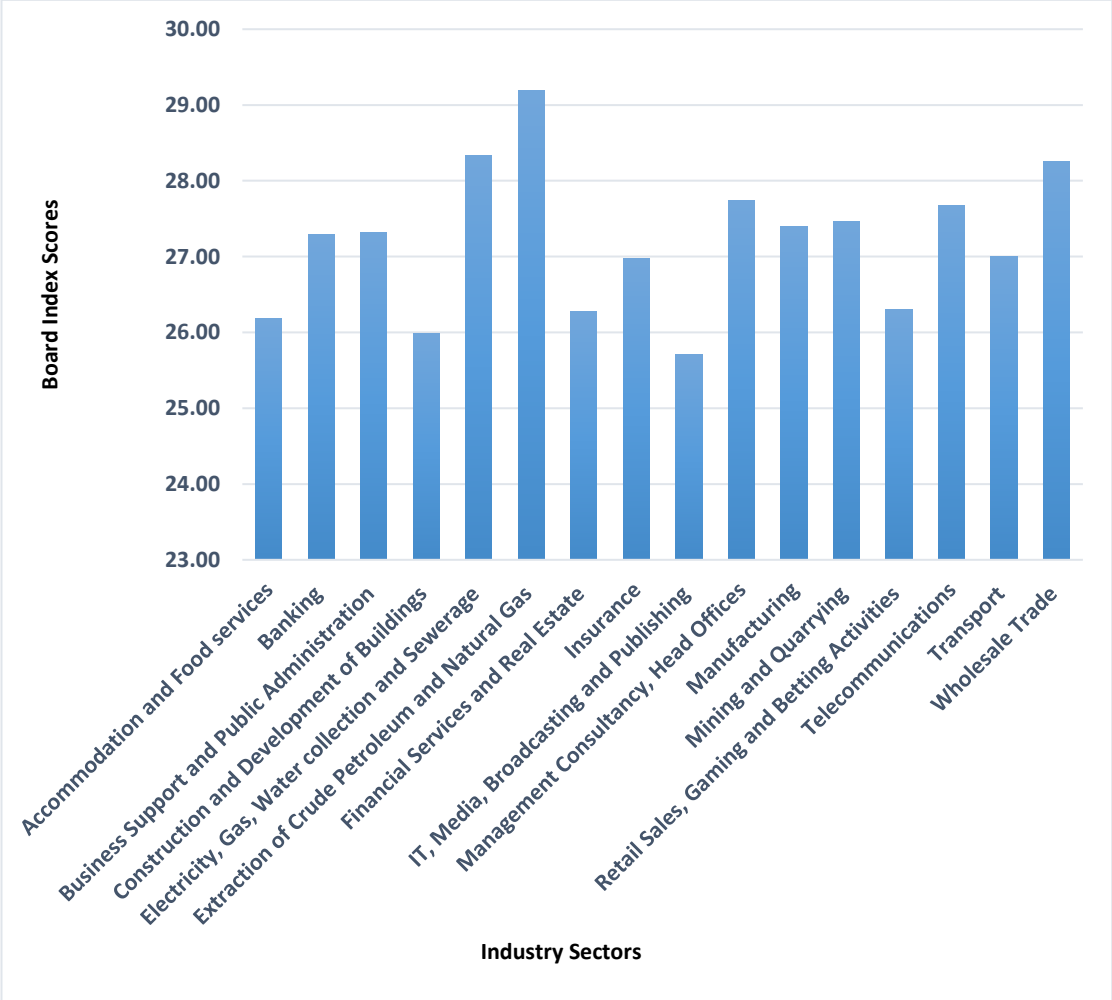
The table shows a summary of the association between each of the independent variables and financial performance in each industry using ROA as the dependent variable. The independent variables are defined in Table 4.5 of Chapter 4. Positive depicts a positive association; negative depicts a negative association whereas none depicts no association. Superscripts ***, ** and * stand for statistical significance based on two-tailed tests at the 1%, 5% and 10% significance levels respectively. The 10% significance level displays weak evidence of an association, therefore the study concludes that there is no association between the variables at this significance level.

6.2 Board Index: Industry Findings and Discussion

The industry findings summarised in Table 6.2 show that there was a positive and significant association between the board index and Tobin's Q in the accommodation, business support, IT/media and manufacturing industries. Conversely, the results from the financial services industry showed a negative association between the board index and Tobin's Q. Table 6.3 shows a positive association between the board index and ROE in the accommodation industries, and no significant association is observed in any of the other industries. In regards to ROA, Table 6.4 displays a significant and positive association between the board index and ROA in the business support, construction and manufacturing industries and no significant association is observed in the other industries. Overall, at least 10 industries displayed no significant association between the board index and financial performance. However, hypothesis 16 cannot be rejected, the association between the board index and financial performance differs between industries.

The extant literature suggests that a conflict of interest arises between principals and agents in firms when there is poor governance characterised by the absence of effective monitoring (Renders, Gaeremynck, & Sercu, 2010). Therefore, firms can reduce agency costs and conflicts of interest by adopting good governance practices, and this in turn, should result in improved company performance (Reguera-Alvarado & Bravo, 2017). This line of thinking is based on agency theory and corporate governance researchers have proposed a variety of good governance practices that can improve the monitoring function and capabilities of boards. Prominent proposals in the literature include the proportion of independent non-executive directors, appropriate board size, eliminating CEO duality, the composition and existence of board committees and enhancing directors' accountability (DeFond et al., 2005; Dowell et al., 2011; Hambrick et al., 2015; Tuggle et al., 2010). The board index constructed by the researcher takes into account these attributes that are considered as good governance practices and therefore a positive association between the board index and financial performance is expected. The board index constructed had a maximum of 31 points upon which firms could be scored and the average board index scores for each industry are presented in Figure 6.3.

Figure 6.1 Average Board Index Scores by Industry (2004-2014)



One of the most interesting findings from the industry analysis is that the extraction of crude petroleum and natural gas industry had the highest average board index score of 29.20 across the years. However, the multivariate analysis showed no association between the board index and financial performance in this industry. This finding contradicts previous studies and the literature that states better corporate governance practices enhance and improve firm value and firm performance (Garay & González, 2008; Renders et al., 2010). Previous work by Kang et al. (2007) noted that companies in the materials sector have more independent boards which may be due to the high political costs in this industry sector. Therefore, firms in the materials industry may be more inclined to demonstrate their willingness to main good corporate governance practices (Kang et al., 2007). An earlier study by Agrawal and Knoeber (1996) further argued that firms with high political costs often had too many independent NEDs on the board, which may not help in improving firm performance. This study's findings therefore suggest that maintaining good corporate governance practices may not always lead to improved performance, especially in industries with high political costs such as the crude petroleum industry. On the other hand, the construction and IT/media industries had the lowest average board index scores of 25.99 and 25.71 respectively across all the years. In addition, a positive association between the board index and financial performance was observed in these industries. Notably, in the construction industry findings, the board index only had a positive association with ROA and not with the other measures of financial performance. ROA shows the earnings generated from invested capital assets and it incorporates the profitability of the firm thus representing the actual performance of a firm (Zabri, Ahmad & Wah, 2016). Therefore, Khanna et al. (2014) state that accounting based measures of performance are better indicators of the effectiveness of the governance of a firm. This is consistent with Bhagat and Bolton (2008) who after controlling for endogeneity, found a positive link between a number of corporate governance measures and operating performance and no link with market value.

The industry findings also provide strong evidence of a significant and positive association between board index and financial performance in the accommodation, business support and manufacturing industries. This suggests that the board practices of companies in these industry sectors have a positive effect on financial performance.

Guillet and Mattila (2010) studied the corporate governance practices of companies in the hospitality industry, hotels and restaurants, and found that these companies are highly sensitive to changes in the economy; therefore, shareholders may demand that directors play a greater monitoring role. Therefore, the finding of a positive association between the board index and financial performance in the accommodation industry could be attributed to shareholders demanding that directors play a greater monitoring role. The board index includes different attributes that are considered as good corporate governance in line with the principles of the UK Corporate Governance Code 2014.[27] Therefore, these findings contribute to, and are consistent with, the extant literature that proposes good corporate governance has a positive impact on firm performance (Gompers et al., 2003; Velnampy & Pratheepkanth, 2013). The industry findings also revealed that only one industry, the financial services industry, displayed a negative association between the board index and Tobin's Q. This finding contradicts the majority of empirical literature that has shown that corporate governance ratings and indices have a positive impact on firm and market value (Durnev & Kim, 2005; Garay & Gonzalez, 2008; Klapper & Love, 2004). However, other studies have also indicated a negative association between corporate governance practices and firm performance (Agrawal & Knoeber, 1996; Bhagat and Bolton, 2013). Reguera-Alvarado and Bravo (2017) argue that the mixed results from some previous studies are due to methodological differences with many studies not accounting for endogeneity. Further to this, Wachudi and Mboya (2012) note that the majority of studies that have examined board diversity and corporate governance practices of firms have excluded the financial sector. Therefore, previous studies do not adequately indicate the relationship between board practices and firm performance in the financial services sector. This study contributes to the existing body of literature by providing empirical evidence of a negative association between board practices and financial performance of firms in the financial services industry sector using a methodology that accounts for endogeneity.

[27] At the time when the board index was constructed, the most recent governance code was the 2014 Code. However, the researcher is aware that currently the most recent one is the UK Corporate Governance Code 2018. The main principles used in the board index are similar in both codes.

6.3 Age Diversity: Industry Findings and Discussion

The results presented in Tables 6.2 to 6.4 show that the majority of the industry findings on age diversity display no association with financial performance. This is also reflected in the main analysis results that were discussed in Chapter 5. The results vary between industries, for instance, the findings from the mining and quarrying industry show a positive association between age diversity and Tobin's Q, whilst the findings from the insurance industry show a positive association between age diversity and ROA. In contrast, the findings from the retail sales and wholesale industries display a negative association between age diversity and Tobin's Q, whilst the findings from the transport industry display a negative association between age diversity and ROE and ROA. Lastly, the findings from the management consultancy industry display a negative association between age diversity and all the financial performance variables. Therefore, hypothesis 9 cannot be rejected, the association between age diversity of the board of directors and financial performance differs between industries.

The study's theoretical framework and the extant literature on age diversity suggests that differences in generations may help in preventing the 'group think' effect on the board and lead to enhanced monitoring (Bekiroglu, Erdil & Alpkan, 2011). Further to this, Ararat et al. (2015) note that age diversity on boards may improve monitoring and the decision making process by balancing the energy and risk appetite of younger directors with the experience and risk averseness of older directors. This is consistent with the upper echelons theory perspective that contends differences in executives' characteristics influence their decisions and perceptions which leads to heterogeneity and improved decision making in top management teams (Hambrick, 2007). From an agency theory perspective, it can be argued that age diversity can increase board independence because individuals of different ages essentially perceive things differently which leads to a more analytical and 'questioning' board (Rao & Tilt, 2016). From a resource dependence theory perspective, an age diverse board can capitalise on the wider range of networks and resources delivered by directors from different backgrounds and generations (Miller & Triana, 2009). The findings of a positive association from the mining and insurance industry sectors are consistent with this literature. Ali et al. (2014) note that in some industries, such as high-tech

manufacturing and technology businesses, younger directors can contribute more through their knowledge and insights on technological advances. This is particularly applicable to the mining industry that has become more innovative and uses technologically sophisticated equipment (Bartos, 2007).

Abdullah, Ismail and Izah (2017) note that directors in UK firms are predominantly white males over the age of 60 years and, similar to Australian firms, there has been a lack of diversity with respect to age in these firms. The majority of the industry findings in this study display that the market seems to be indifferent to the issue of age diversity as no association is found with financial performance in 12 out of 16 industries. These findings are consistent with some previous studies that found non-significant associations on the age diversity–performance relationship, with some scholars concluding that this may be attributed to this association having a curvilinear relationship (Ali et al., 2014; Bonn, Yoshikawa & Phan, 2004; Jhunjhunwala & Mishra, 2012). Further work should be done to expand on the suggested curvilinear relationship between age diversity and financial performance, and this is discussed further in Chapter 7. In contrast, other studies argue that age diversity on boards can lead to conflicts in communication and teamwork which results in negative effects on firm performance (Dobbin & Jung, 2011). This was evident in the industry results from the management consultancy, retail sales, wholesale and transport industries. This line of thinking is consistent with social identity theory that was discussed in Chapter 2, and that contends younger or older directors are more likely to interact with directors within the same age group as themselves which can create conflict on the board (Twenge et al., 2010). Studies by Ali et al. (2014) and Abdullah et al. (2017) both document negative associations between age diversity and financial performance. They further conclude that the resources and benefits produced by age diversity are less significant than the psychological categorisation into older and younger directors that leads to negative group behaviours (Ali et al., 2014).

Two conclusions can be drawn from this study's industry findings and the extant literature on age diversity. First, the retail sales and management consultancy

industries had average values of 0.44 and 0.39 respectively which is relatively high considering the mean value of age diversity for the full sample was 0.40 (see Appendix K).[28] This suggests, that in comparison to other industries, these industry sectors had a wider age range of directors and in particular more younger directors, considering the UK context as previously discussed. Therefore, in line with the propositions of Abdullah et al. (2017), it could be argued that younger directors who are more dynamic, who have riskier appetites and are more forward-looking may be willing to take on more risks that could be harmful to performance in the short term. If this is the case, then the negative effect on firm performance displayed in the retail sales and management consultancy industry sectors would be expected. Second, a different conclusion that could be drawn from the industry analysis is based on the idea of a curvilinear relationship between age diversity and financial performance. That is, lower levels of age diversity on boards are beneficial as this brings valuable resources and skills to the board without the risk of triggering negative group behaviours with higher levels of age diversity (Ali et al., 2014). For instance, the mining and quarrying industry had one of the lowest mean values of age diversity, 0.35, and the industry analysis displayed strong evidence of a significant and positive association with financial performance at the 1% significance level in this industry sector. This finding suggests that lower levels of age diversity on the board coupled with a high tech industry can positively impact financial performance.

6.4 Gender Diversity: Industry Findings and Discussion

The results in Table 6.2 display that there was a positive association between gender diversity and Tobin's Q in several industries such as accommodation, retail sales and mining industry sectors. In contrast, seven industries displayed no association between gender diversity and Tobin's Q such as, the banking, construction and crude petroleum industry sectors. However, in the insurance and IT/media sectors, there was evidence of a negative association between gender diversity and Tobin's Q. With regards to ROE and ROA, the industry findings revealed that a large number of industries displayed no association between gender diversity and these accounting-based measures. Therefore, hypothesis 10 cannot be rejected, the association between

[28] Age diversity in this study is measured using Blau's index and ranges from 0 to 0.75, with higher figures representing greater diversity.

gender diversity of the board of directors and financial performance differs between industries.

The study's theoretical framework and the extant literature on gender diversity proposes that male and female directors have different skills, knowledge and perspectives, therefore an integration of these different attributes should enhance the decision making process of firms (Ali et al., 2014). From an agency theory perspective, a gender diverse board will have a wider range of opinions and perspectives which increases board independence and enhances the monitoring role of directors (Kuhç & Kuzey, 2016). Therefore, board gender diversity can be a corporate governance mechanism that reduces the cost associated with agency problems (Reguera-Alvarado et al., 2017). This is in line with Catalyst's (2004) study that provided evidence of how women on boards pay more attention to audit, risk oversight and control. From a resource dependence theory perspective, different networks maintained by male and female directors give the firm access to more market segments and enable the firm to access a wider range of critical resources (Campbell & Mínguez-Vera, 2008). For instance, Simpson, Carter and D'Souza (2010) note that female directors have different socialisation experiences and social networks which may benefit firms through these unique experiences, information and knowledge bases. Additionally, Isidro and Sobral (2015) note that the presence of women on boards can improve a firm's legitimacy and public image by signalling to investors and stakeholders that the firm promotes gender equality and diversity. From an upper echelons theory perspective, it can be argued that a gender diverse board is associated with higher quality decisions than a homogenous male only board. This is because males and females differ systematically in their core values, risk attitudes, backgrounds, and perspectives as concluded by Adams and Funk (2012) using a large survey of directors. Post and Byron (2015) conducted a meta-analysis of women on boards and articulated that female directors are more likely to value different opinions and adopt a cooperative decision-making approach on the board that stimulates teamwork. This in turn helps to reduce 'groupthink' and encourages a more critical evaluation of alternative ideas and viewpoints (Conyon & He, 2017).

The extant literature has postulated a number of benefits associated with gender diversity on boards including enhanced decision making quality, stringent board monitoring and improved financial performance (Adams & Ferreira, 2009; Terjesen et al., 2009). The empirical evidence in support of these claims however has been mixed (Ferreira, 2015; Post & Byron, 2015). Academic research also indicates that there are fewer women on boards relative to their presence in the population (Conyon & He, 2017). Figure 6.1 displays the mean values of the percentage of women on boards in each of the industry sectors across all years in the sample period (2004-2014).

Figure 6.2 Average Percentage of Women on Boards by Industry (2004-2014)

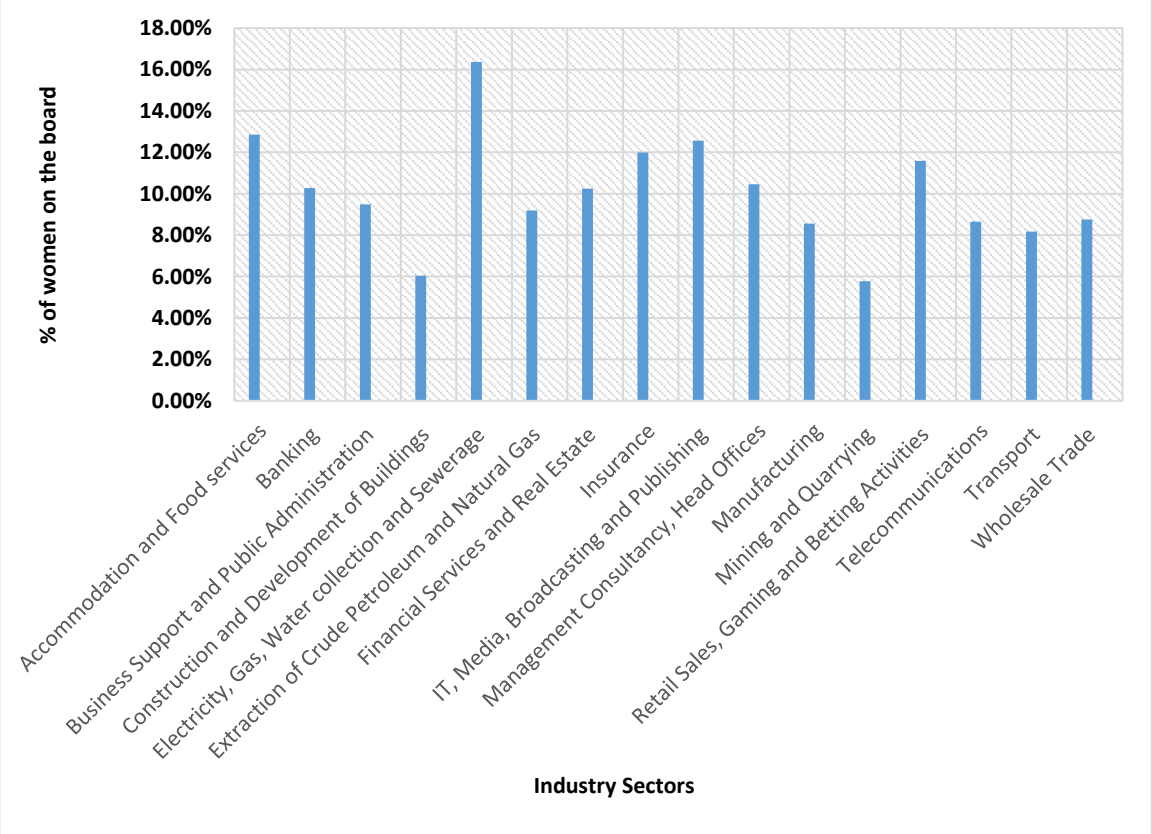


Figure 6.1 displays that overall the accommodation, electricity/water and retail sales industries were amongst some of the sectors that had relatively higher levels of women on boards. In addition, in these three industries, a significant and positive association with financial performance was found. Guillet and Mattila (2010) studied the corporate governance practices of companies in the hospitality industry, hotels and restaurants, and found that these companies are highly sensitive to the changes in the economy. Therefore, shareholders may demand directors to play a greater monitoring role. Grosvold et al. (2007) found that the utilities sector was one of the leading industries in the UK when it came to board diversity. This study's results are consistent with the findings of McCormick-Hyland and Marcellino (2002) who noted that women are most highly represented in service industries such as wholesale and retail trade. This is similar with the line of thinking that boards should reflect diversity among relevant stakeholder constituencies, and for that reason board composition is expected to vary across different sectors (Brammer et al., 2007). Similarly, it is argued that some companies appoint female directors in order to maintain good relations with their female customers (Liu, Wei & Xie, 2014). Further to this, numerous scholars suggest that industries such as retail and service industries, that predominantly serve final consumers, as opposed to business customers, tend to have higher proportions of women on their boards (Brammer et al., 2007; Pathan & Faff, 2013). This is consistent with the work of Stephenson (2004) who posed the question: who better than a female board member to offer insights on the female customer? This study suggests that gender diversity on boards has a positive impact on the performance of companies that operate in service industries reflecting the stakeholders they serve.

A different stream of literature postulates that until a certain threshold or a critical mass of women on the board is reached, the different skills and abilities that women have will be insignificant (Joecks, Pull & Vetter, 2013). One of the earliest scholars that explored this line of thinking, Kanter (1977), noted that when this critical mass is not reached, women will be seen as tokens and therefore will either be overlooked or they may hide their individual characteristics behind stereotypes. This is consistent with Konrad et al.'s (2008) study that concluded a critical mass of three or more women on boards will break the stereotypes of women, change the all-male

communication dynamic and will be more beneficial in fostering change in the boardroom. This stream of literature may be applicable to industries such as banking, business support and construction that had an average of 10% or less of women on their boards and whose regression results revealed no association with financial performance. The mining and quarrying industry sector had the lowest average percentage of women on boards, however the regression results revealed strong evidence of a positive relation with financial performance. Previous studies have commonly excluded the mining sector from their samples (Carter et al., 2003; Kiel & Nicholson, 2003). However, Kang et al. (2007) noted that companies in the materials industry have high political costs and therefore are more likely to demonstrate their willingness to main good corporate governance practice. This is unlike other industries such as the construction industry, that is predominantly male dominated and appears to be less willing to appoint female directors (Equality and Human Rights Commission, 2011; Grosvold et al., 2007). The insurance and IT/media industries displayed evidence of a negative association between gender diversity and financial performance, and they did not have the lowest percentages of female on boards. This is consistent with the literature that suggests that diversity of boards might lack sufficient cohesion and lead to team conflicts that would impede the quality of decision making and negatively affect performance (Conyon & He, 2017; Marinova et al., 2016).

6.5 Highest Education Band: Industry Findings and Discussion

The results in Table 6.2 display that there is a positive association between the highest education band and Tobin's Q in the electricity/water, manufacturing, mining and wholesale industries. In the other 12 industries there was no association between the highest education band on the board and Tobin's Q. Table 6.3 displays evidence of a positive association between the highest education band and ROE in the manufacturing industry only and no association in all the other industries. In regards to ROA, Table 6.4 displays similar results with the exception of a negative association between the highest education band and ROA in the management consultancy and transport industries. Therefore, hypothesis 11 cannot be rejected, the association between education levels of the board of directors and financial performance differs between industries.

The extant literature on directors' education levels and performance suggests that individuals with higher education levels are assumed to have higher intellectual properties and tend to give more reasons and objectives in the decision making process; and this in turn improves firm performance (Zhihua, 2010). Tulung and Ramdani (2016) note that the level of education is a reflection of an individual's cognitive ability, therefore higher education is related to a higher capacity of information processing. This is consistent with upper echelons theory that proposes that the educational level provides an indication of skill base, human capital and knowledge (Certo, 2003; Hambrick & Mason, 1984). Similarly, it can be argued that from a resource dependence theory perspective, highly educated directors may enhance the legitimacy and prestige of a firm (Wang et al., 2017). From an agency theory perspective, a highly educated board can enhance corporate governance by providing a more effective advisory and monitoring role (Khanna et al., 2014). Therefore, the literature proposes that the knowledge gained from formal education is useful to directors in carrying out their daily tasks and in maintaining the competitive position of the firm by improving firm performance (Tulung & Ramdani, 2016).

The findings from the manufacturing, electricity/water, mining and wholesale industries on highest education band and financial performance support the literature that states highly educated directors have greater knowledge and skills that improve the decision making process and success of the firm (Bell et al., 2011). Notably, these four industries all displayed a positive association between highest education and Tobin's Q whereas only the manufacturing industry displayed an association between highest education band and ROE and ROA. The findings of a positive association with Tobin's Q are in line with the propositions of scholars in the upper echelons field who contend that directors' education level can affect a board's reputation and prestige (D'Aveni 1990; Johnson et al., 1993). Certo (2003) further suggests that highly educated directors can enhance the board's prestige and its organisational legitimacy. If this is the case, then the impact of directors' education level would be best represented in a market measure such as Tobin's Q. In addition, Wang et al. (2017) note that several studies show that a company's perceived legitimacy can allow the

managers and directors to influence the perceptions of stakeholders and acquire resources that are key to a company's survival. In regards to the findings from manufacturing industry, Ooi et al. (2015) note that in industries such as manufacturing and agriculture, the human capital of the board of directors, including the skills gained from education, is more important than the social capital when it comes to the effectiveness of the decision making process.

The majority of the industry findings displayed no association between the highest education band and financial performance. This is similar to the work of Bhagat, Bolton and Subramanian (2010) who found that education was a critical factor in the appointment of CEOs, however they found no evidence of a systematic relationship between education and performance. This study further concluded that firms may enjoy short term profits when a new CEO with higher education is appointed, however this is short lived. This suggests that the education of directors may only have a short-term impact on performance and this would not be reflected in this study because a two year lag was incorporated in the data. The negative association between highest education band and ROA in the management and transport industries is consistent with Jalbert, Rao and Jalbert's (2002) study that found a negative relationship between CEO education and ROA. They concluded that the evidence of the association between the education of CEOs and firm performance shows a weak correlation, however it may be that the type of degree is of more importance.

6.6 Education Diversity: Industry Findings and Discussion

The industry findings in Table 6.2 show that there was a positive association between education diversity and Tobin's Q in the construction and mining industries, whereas a negative association was displayed in the accommodation and IT/media industries. The majority of the industry findings (12 out of 16), however showed no significant association between education diversity and Tobin's Q. These results are similar when using ROE as the dependent variable, as a positive association with education diversity is only found in the management and transport industries and a negative association is found in the financial services industry. Overall, the industry

findings do not provide strong evidence of a positive association between education diversity and financial performance. However, hypothesis 12 cannot be rejected, the association between education diversity of the board of directors and financial performance differs between industries.

Scholars argue that the business environment for large firms is increasingly complex therefore a wide array of knowledge, education and occupations can allow the board to tackle complex decisions (Mahadeo et al., 2012; Wang et al., 2017). Further to this, educational diversity on the board can potentially lead to a more in depth assessment of decisions which would address information asymmetry issues between the board and management, and reduced agency costs (Mahadeo et al., 2012). A different body of literature has argued that individuals with diverse backgrounds and diverse formal education can increase creativity and innovation which are essential skills in decision-making (Østergaard, Timmermans & Kristinsson, 2011). However, some upper echelons theorists have noted that education can serve as an indicator of one's values and cognitive preference only if it is assumed that most people take decisions about their education very seriously (Hambrick & Mason, 1984). Looking at business education, other theorists and critics have argued that MBA programmes attract conservative, risk-averse students who are taught analytic skills geared towards avoiding big mistakes or losses (Barker & Mueller, 2002). Therefore MBA programmes are perceived as doing little towards developing innovative or risk taking skills in students. A similar argument may be applied for legal education which also seems to place little emphasis on innovation (Barker & Mueller, 2002). When taken together these arguments suggest that rather than focusing on higher education levels or a particular type of education, it could be more beneficial for firms to have directors from diverse educational backgrounds to provide more diverse perspectives (Bell et al., 2011). This is consistent with Ararat et al.'s (2015) study that suggested firms should value both high and low levels of education based on their proposition of directors with limited education having more intuitive skills.

The findings from the construction, mining, management consultancy and transport industries are consistent with the extant literature and propositions of the

upper echelons theory discussed above. However, in contrast to the literature, the majority of the industry findings find no association between education diversity and financial performance. These findings are in line with Murray's (1989) study which found that in some industries (e.g. oil industry) a homogenous board in terms of educational background would perform better due to the specialist knowledge required in that industry. Notably, the industry findings revealed an association between education diversity and financial performance in the crude petroleum industry which Murray (1989) termed a 'specialist' industry. Similarly, although Bantel (1993) found some evidence that greater educational diversity leads to better decision-making and firm performance, he suggested that industry effects should be taken into account. Other industries such as the accommodation, IT/media and financial services industries displayed evidence of a negative association between education diversity and financial performance. These findings are consistent with the literature that argues diverse perspectives and backgrounds may interfere with group dynamics and, create problematic group processes such as miscommunication which could slow down the decision making process and negatively impact performance (Østergaard et al., 2011). Notably, the mean values of education diversity on the board for these industries were 0.50 for the accommodation and IT/media industries and 0.44 for the financial services industries. This displays moderately high levels of diversity as the maximum value for diversity for this measure was 0.75. Pechlaner and Sauerwein (2002) noted that unlike other industries, companies in the tourism industry are required to be more innovative and must frequently revise their strategies in line with the rapidly changing environment in which they operate. Considering this, the study suggests that in industries such as the accommodation and IT/media, where the environment rapidly changes, education diversity on the board may interfere with the board's cohesiveness and negatively impact performance.

6.7 Highest Experience Band Industry Findings and Discussion

The industry findings in Table 6.2 display a significant and positive association between highest experience band and Tobin's Q in the accommodation, construction, IT/media and mining industries. Similarly, the industry findings in Table 6.3 display a positive and significant association between highest experience band and ROE in the accommodation, IT/media and wholesale industries. In addition, there is a positive

association between highest experience band and ROA in the accommodation and IT/media industries. The business support, financial services, construction and manufacturing industries display a negative association between the highest experience band and ROE and ROA, respectively. Overall, the majority of the industries show no association between highest experience band and financial performance. However, hypothesis 13 cannot be rejected, the association between experience levels of the board of directors and financial performance differs between industries.

This study's theoretical framework and the extant literature propose that directors' decision-making is influenced by their prior work experience, therefore prior experience on a board makes directors more effective in their roles (McDonald, Westphal & Graebner, 2008). This line of thinking is consistent with upper echelons theory. Anderson et al. (2011) further argue that prior board experience gives directors a better understanding of group dynamincs, corporate culture, advising and providing strategic advice which enhances the skills they bring to the board. Kroll et al. (2008) note that learning takes place by doing, therefore experienced directors have a vital skill of learned knowledge. Hambrick, Werder and Zajac (2008) also note that ideally directors should be highly qualified to provide professional advice to the firm's management and directors who lack relevant experience are incapable of fully contributing to corporate strategy and advising managers. From a resource dependence theory perspective, the experience of directors can signal the prestige and reputation of a director and, highly experienced directors are associated with higher quality (Anderson et al., 2011). Agency theory does not elaborate on the issues pertaining to directors' experience, however in practice it can be assumed that a director with prior experience of the role can reduce agency costs and improve the quality of monitoring and advising on the board (Shiah-Hou & Cheng, 2012). Taken together the theory and literature propose that highly experienced directors should have a positive impact on the financial performance of the firm.

The industry findings from several industries are consistent with the aforementioned literature. Particularly, the accommodation and IT/media industries

provide strong evidence of a positive association between the highest experience band and both market and accounting based measures of financial performance. Guillet and Mattila (2010) studied the corporate governance practices of companies in the hospitality industry, hotels and restaurants, and found that these companies are highly sensitive to the changes in the economy. Therefore, shareholders may demand that directors play a greater monitoring role. Interestingly, in Section 6.5 the industry findings on education diversity suggested that in industries such as the accommodation and IT/media, where there is a rapidly changing business environment, quicker decision making is required and education diversity hindered this. Conversely, these industries display that highly experienced directors have a positive impact on financial performance, therefore this study suggests that in rapidly changing business environments, directors with prior experience as a director can positively contribute to the decision-making process of firms and improve financial performance. This is consistent with the work of Huse (2007) who states that in highly competitive or unstable environments, quicker decision-making is needed therefore directors should have the best insight and knowledge of complex situations.

The industry findings also reveal that in the construction and mining industries there was a positive association between highest experience band and market based measures of performance, no association with accounting based measures for the mining industry and a negative association with ROA was observed for the construction industry. This has two implications, first, this finding is consistent with previous studies that find when CEOs are appointed as directors, the stock market reacts positively (Fich, 2005; Tian, Haleblian & Rajagopalan, 2011). This is in line with the stream of literature that states prior experience as a director can signal a director's proven track record, accomplishments, social ties and networks with other companies (Nguyen et al., 2015). In this case, the impact of the directors' prior experience would be better represented in a market based measure of performance such as, Tobin's Q, rather than in accounting based measures. Khanna et al. (2014) state that accounting based measures of performance are better indicators of the effectiveness of the governance of a firm. Taken together, the findings from the construction industry suggest that highly experienced directors in this industry provide a good signal of director quality to the market but do not necessarily improve the

governance of the firm. In addition, Anderson et al. (2011) noted that shareholders seem to place greater value on the experience and profession of directors than their gender, ethnicity and age. In regards to the business support, financial services and manufacturing industry a negative association between highest experience band and financial performance was observed. These results suggest that in these industries, the greater the experience of the board, the worse the financial performance and this could attributed to the argument of too much board monitoring that would decrease shareholder value (Adams & Ferreira, 2009).

6.8 Experience Diversity Industry Findings and Discussion

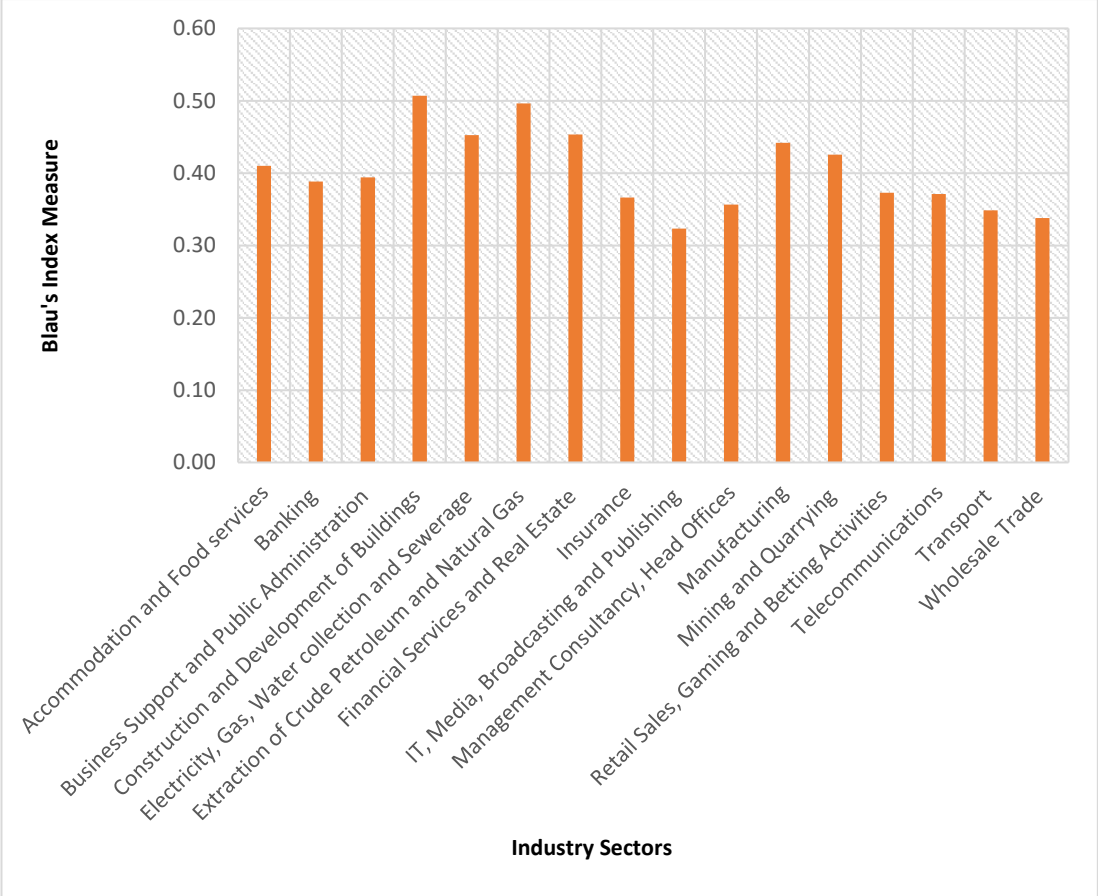
The industry results in Table 6.2 display that there was a positive association between experience diversity and Tobin's Q in the crude petroleum, insurance, management consultancy, mining, retail sales and transport industries. In the construction industry, a negative association was displayed between experience diversity and Tobin's Q. When using ROE as a measure of financial performance, the industry analysis revealed a positive association with experience diversity in the IT and media, management, mining and retail sales industries and a negative association in the insurance industry. These results are similar when using ROA as a measure of financial performance. Overall, eight out of 16 industries displayed no significant association between experience diversity and financial performance. Therefore, hypothesis 14 cannot be rejected, the association between experience diversity of the board of directors and financial performance differs between industries.

This study's theoretical framework and the existing body of literature propose that in modern day complex business environments, a much wider array of knowledge and occupations is vital in order for boards to tackle multiple dimensions of the decision making process (Mahadeo et al., 2012). These dimensions include financial, legal, environmental, operational, ethical and human resources issues. Therefore, directors with expertise or experience in any of these areas, or with prior director experience would have developed complex decision-making and problem solving skills in their area of expertise, which will be beneficial in improving the decision making of firms and firm performance (McDonald, 2008). Upper echelons theorists

propose that executives' prior experiences are particularly significant in board roles such that executives should be able to leverage their vast and diverse sets of knowledge and skills and, in so doing, improve firm performance (Hambrick, 2007; Kroll et al., 2008). Further to this, resource dependence theorists suggests that such diversity may be beneficial in accessing vital resources for the firm and in expanding the collective networks and ties of the board (Johnson et al., 2013). Agency theory, does not directly acknowledge that directors may require different skills in order to adequately exercise their duties, however, earlier proponents of agency theory underlined the importance of independent NEDs with specific expertise (Fama & Jensen, 1983). Therefore, based on the notion that experience diversity brings multiple perspectives and expertise in the boardroom, it can be argued that this will make the board more effective in exercising control, monitoring and advising management (Anderson et al., 2011).

The industry analysis reveals that the findings from several industries are consistent with the study's theoretical framework and the extant literature. Strong evidence of a positive association between the experience diversity of directors and financial performance is found in the retail sales and mining industries. Figure 6.2 presents the average values of experience diversity in each of the industry sectors across all the years in the sample period.

Figure 6.3 Average Experience Diversity by Industry (2004-2014)



The mining and retail sales industries displayed a positive association between experience diversity and financial performance when using all three dependent variables, notably however, the mean values of experience diversity were 0.43 and 0.37, respectively. Other industries that displayed evidence of a positive association between experience diversity and financial performance, such as transport and management industries, had mean values of 0.35 and 0.37, respectively. Considering that the highest value of diversity from the Blau's index measure was 0.75, these values represent moderate diversity. Conversely, the construction industry had the highest mean value of 0.51 and the findings displayed a negative association between experience diversity and Tobin's Q. This is in line with the work of Østergaard et al. (2011) who argued that there should be an adequate balance of experience diversity in a group, such that it does not hinder the cohesiveness of the group or become too specialised. In addition, Golden and Zajac (2001) concluded that some diversity is beneficial but after a certain point it constrains action and impedes strategic change. In contrast, the crude petroleum industry had a mean value of 0.50 and displayed a positive association with Tobin's Q. This suggests that higher levels of experience

diversity do not always impede the cohesiveness and decision-making process of the board, dependent upon the context. The insurance industry displayed a negative association between experience diversity and the accounting measures of performance. Other scholars who have investigated the mix of occupations and experience diversity on the board have found evidence that the diversity of the opinions can create conflict and prohibit strategic change or allow the CEO to exert greater control (Johnson et al., 2013).

6.9 Multiple Directorships: Industry Findings and Discussion

The industry findings presented in Table 6.2 show that there is a positive and significant association between multiple directorships and Tobin's Q in the crude petroleum and manufacturing industries. Conversely, Tables 6.3 and 6.4 show a negative association between multiple directorships and the accounting measures of performance, ROE and ROA, in the retail sales and electricity/water industries. Overall, the industry analysis reveals that in the majority of the industries there was no significant association between multiple directorships and financial performance. However, hypothesis 15 cannot be rejected, the association between multiple directorships on the board of directors and financial performance differs between industries.

Corporate governance literature that has examined the effectiveness of directors on the board has also paid attention to the commitments of directors in regards to the external directorships they hold in other firms (Jackling & Johl, 2009; Kor & Sundaramurthy, 2008). This literature has suggested that the effect of multiple directorships is twofold. The first stream of literature suggests that directors with multiple appointments have richer experiences and connections and therefore can provide access to various important resources that improve firm performance (Sarkar & Sarkar, 2009). In addition, through external appointments directors acquire broader knowledge that can be beneficial in enhancing the decision making process of the board (Reguera-Alvarado & Bravo, 2017). This view is consistent with the resource dependence theory propositions as the external ties of directors can help in acquiring specific external resources, acquiring support from stakeholders and establishing the

legitimacy of the firm they serve on (Østergaard, 2011; Pfeffer & Salancik, 1978). Further to this, an increase in the number of directorships enhances the reputation of directors. This is because a director who serves on several boards has a verified ability to provide advice and counsel and this increases their demand as a director (López Iturriaga & Morrós Rodríguez, 2014). Reguera-Alvarado and Bravo (2017) further argue that this reputation effect can give directors incentives to be more engaged, to improve corporate strategies and firm performance in order to maintain their reputation. Similarly, directors' prestige and reputation can be an informational signal to the market and to stakeholders about the firm (Johnson et al., 2013). The other stream of literature suggests that multiple directorships may make directors too busy to adequately perform their monitoring role and dedicate sufficient time to the organisation (Johnson et al., 2013). In addition, serving on too many boards can limit directors' time and preparation for board meetings which narrows their ability to provide useful advice and effectively contribute to strategic decisions (Carpenter & Westphal, 2001; Reguera-Alvarado & Bravo, 2017). This in turn would negatively impact firm value and firm performance (Lei & Deng, 2014).

The findings from the industry analysis reveal that a positive association between multiple directorships and financial performance was only found in the crude petroleum and manufacturing industries using Tobin's Q as the dependent variable. Traditionally, oil companies have been blamed for undermining good governance and it is only recently that oil companies have begun to attach greater importance to good governance and to their social impact (Frynas, 2010). With this mind, the findings suggest that directors with multiple directorships in the crude petroleum industry can positively contribute to firm value and legitimacy through their prestige, visibility and connections (López Iturriaga & Morrós Rodríguez, 2014). In addition, the value of such reputational capital is best represented in a market based measure of performance, such as Tobin's Q, rather than accounting based measures and this was evident in the industry findings. On the other hand, a negative association between multiple directorships and ROE and ROA, was observed in the retail sales and electricity/water industries. These findings are consistent with the over commitment view of multiple directorships where such appointments compromise a directors' ability to effectively monitor management and provide strategic advice (Laoworapong, Supattarakul &

Swierczek, 2015). In addition, this is in line with Kamadin and Haron (2011) who noted that accounting based measures are more appropriate for investigating the agency costs on performance. These results are similar to previous studies that found 'busy directors' were associated with less monitoring and poorer firm performance (Hoitash, 2011; Jiraporn et al. 2008). Therefore, this study suggests that in the retail sales and electricity/water industries, multiple directorships may lead to less effective monitoring which would increase agency costs and negatively impact performance. The majority of the industry findings revealed no association between multiple directorships and financial performance and this is similar to several other studies (Ferris & Jagannathan, 2001; Ferris et al., 2003; Harris & Shimizu, 2004). Kiel and Nicholson (2006) concluded that the number of directorships held by a director might not mean they are unable to handle their commitments; rather it may be that 'busy' directors are busy because they are good at their jobs.

6.10 Overall Discussion of Industry Analysis

Johnson et al. (2013) note that greater board diversity may be viewed as a method to balance trade-offs between creating a cohesive board and gathering different perspectives. In addition, greater board diversity can be viewed as a method of accessing a wider range of resources and networks (Farrell & Hersch, 2005). Therefore, Johnson et al. (2013) contend that depending on the context, board diversity can either facilitate positive outcomes, constrain these outcomes or balance them for a given firm. Thus, taking into account contextual factors and conducting an industry analysis can help in reconciling conflicting findings from previous studies. This is evident in the industry analysis conducted in this study as different diversity variables displayed differing impacts on the various industries. The industry analysis revealed that gender diversity and experience diversity had the most positive associations with financial performance in the different industry sectors. Overall, the industry analysis provides empirical evidence to support the notion that 'one size does not fit all'. Table 6.5 presents a summary of the hypotheses findings in this chapter.

Table 6.5 Summary of Industry Analysis Hypotheses

	RESEARCH HYPOTHESES							
DEPENDENT VARIABLE	**H9** (Board Index)	**H10** (Age Diversity)	**H11** (Gender Diversity)	**H12** (Education Level)	**H13** (Education Diversity)	**H14** (Experience Level)	**H15** (Experience Diversity)	**H16** (Multiple Directorships)
TOBIN'S Q	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**
ROE	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**
ROA	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**

The industry analysis reveals a much stronger business case for board diversity in the mining and quarrying industry as the variables age diversity, gender diversity, highest education band, education diversity, highest experience band and experience diversity had a positive and significant association with financial performance. The mining industry is considered a hi-tech industry with a complex business environment and the extant literature proposes that in such industries, a wide array of knowledge, education and occupations can allow the board to be more effective in tackling complex decisions (Mahadeo et al., 2012; Wang et al., 2017). Notably, the mining and quarrying industry was one of the only two industries in the sample that displayed a positive association between age diversity and financial performance. This finding is in line with the work of Ali et al. (2014) who suggest in some industries, such as high-tech manufacturing and technology, younger directors can contribute their knowledge and insights on technological advances. Therefore, age diversity is expected to positively impact performance in an industry such as mining that has become more innovative and uses technologically sophisticated equipment (Bartos, 2007). Previous research has argued that industries with final consumers and with a higher female workforce are expected to have more women on the board in comparison to male-oriented industries such as the mining and oil industries (Hillman et al., 2007; Terjesen et al., 2009). In line with this, Figure 6.1 shows that the mining industry had the lowest average percentage of women on boards in comparison with other industries. However, a significant and positive association was found between gender diversity and financial performance in this industry, therefore the study suggests that greater gender diversity on the boards of firms in the mining and quarrying industry may have a positive impact on financial performance. Further analysis of the board gender diversity in this industry reveals some interesting findings on the split between executive and non-executive female directors. This is displayed in Figure 6.4.

Figure 6.4 Executive vs Non-Executive Female Directors in Mining Industry

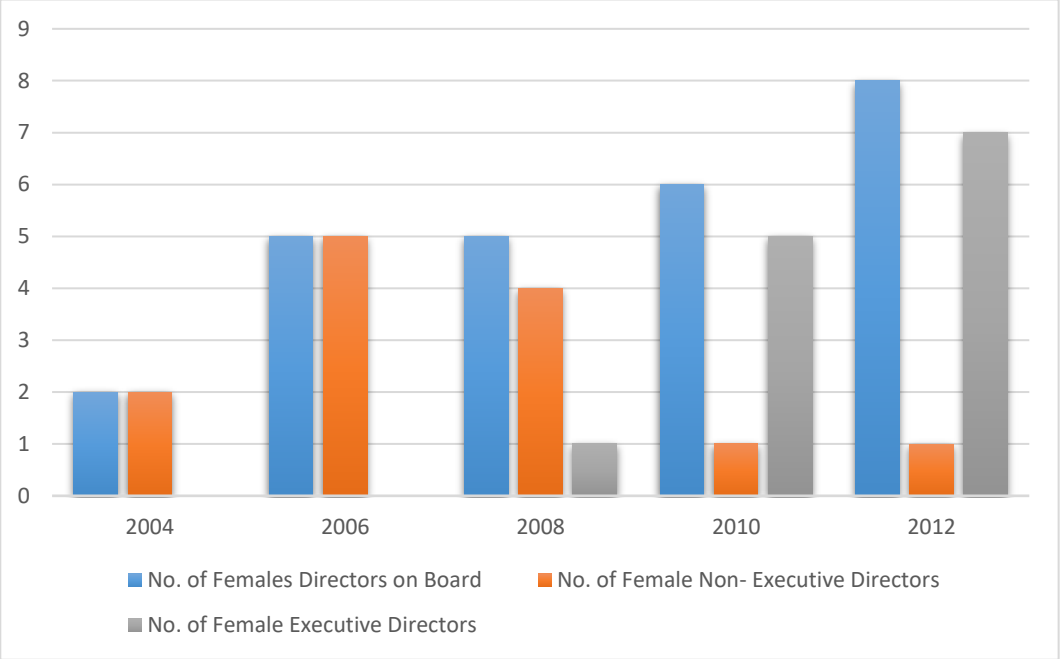


Figure 6.4 displays that in the years 2004 to 2006, there were no executive female directors on the boards of firms in the mining industry. However, from 2008 onwards, there was an increase in both the number of women on boards and the number of female executive directors. Singh and Vinnicombe (2004) conducted a survey of female directors in the FTSE 100 companies and found that 88% of these companies had no female executive directors on the board. They further concluded that the low numbers of executive female directors could affect corporate reputation as an employer of choice as it represents few opportunities for senior women to progress within their own companies (Singh & Vinnicombe, 2004). This line of thinking is more consistent with the ethical case for board diversity. Gregory-Smith, Main and O'Reilly (2014) examined firms listed on the FTSE 350 in the UK over the years 1996-2011 and found that there were more female non-executive directors than female executive directors in these firms. In addition, their study found evidence of a gender bias in the appointment of non-executive female directors, in that most firms appointed a female non-executive director when a female non-executive director had previously stepped down from the board (Gregory-Smith et al., 2014). Therefore, these scholars suggest that since their study found that FTSE 350 firms had fewer executive female directors, and that there was no evidence of a gender bias in

executive appointments, policy makers should strive to increase gender diversity by focusing more on female executive appointments (Gregory-Smith et al., 2014). In regards to the business case for diversity, it is not clear whether female executive directors exert greater influence on the board than non-executive directors do. This stream of research has not been fully explored in the literature and is an area in which future research could be focussed.

The mining industry has been traditionally viewed as a source of environmental degradation and social upheaval and a report by the International Institute for Environment and Development (2002) noted the mining industry has a wider obligation to adopt positive and proactive approaches to social development and to recognise the interests of a broader group of stakeholders. Thus, Yongvanich and Guthrie (2005) suggest that the mining industry is more willing to demonstrate an active role in seeking approval from their stakeholders. Interestingly, the findings for this industry revealed more positive associations between board diversity measures and financial performance when using the market measure Tobin's Q as the dependent variable. This suggests that board diversity in the mining industry could be a means of maintaining public visibility and legitimacy to stakeholders. The majority of studies that have examined corporate governance practices in the mining industry have focused on South Africa and commonly explored structural diversity measures such as board size and independence (Semosa, 2012). Therefore, to the best of the researcher's knowledge, this study is one of the first to examine the link between board diversity and financial performance in the mining and quarrying industry in the UK.

The industry analysis also revealed that in telecommunications there were no significant associations between all of the board diversity variables and financial performance. Grosvold et al.'s (2007) study found very low levels of diversity in the telecommunications industry and this is consistent with this study's findings as the average values of the board diversity measures in the telecommunications industry were relatively low (see Appendix K). Therefore, it could be argued that there was no association between the diversity measures and financial performance in the telecommunications industry because a certain threshold or critical mass was not

reached (Joecks et al., 2013). However, more research would need to be conducted on the link between board diversity and financial performance in this industry to gain more insights. The industry findings for the banking industry also show no association between all of the study's independent variables (age diversity, gender diversity, highest education band, education diversity, highest experience band, experience diversity, directorships and board index) and Tobin's Q in all the regression models. These results remain unchanged when using ROE and ROA as alternative measures of performance. In light of the 2007/8 financial crisis and the exposure of banking directors to legal liability, García-Meca, Garcia-Sanchez and Martínez-Ferrero, (2015) suggested that the banking industry is a good framework upon which to expand studies on the consequences or effects of board diversity on performance. In a similar vein, Sánchez-Lasheras et al. (2012) note that directors of banks are generally subject to more scrutiny than other directors. This is because directors of banks play a key advisory role in strategy implementation and they face greater liability risk, as they are accountable to a wider range of stakeholders such as, depositors, securities and exchange regulators, banking regulators and shareholders (García-Meca et al., 2015). Further to this, Pathan and Faff (2013) argue that banks can help in facilitating better firm governance in their role as creditors and, as shareholders, as a result, well-governed banks can contribute to the proper functioning of numerous firms in various sectors.

Previous studies that have examined board diversity or board structure and firm performance in the banking industry have found mixed results. García-Meca et al. (2015) found evidence that gender diversity on boards of banks improves performance and they further concluded that female directors in banks do not substitute traditional directors but rather offer unique characteristics that create more value in banks. Conversely, Hagendorff and Keasey (2012) examined board diversity in the US banking industry and found age diversity was associated with wealth losses, while gender diversity had no measurable effects on value. However, they found a positive impact on a bank's announcement returns when the directors had a diverse occupational background. In line with this, Adams and Ferreira (2009) show that female directors engage in better monitoring of management but they do not improve firm performance. This study's findings are similar to those of Adusei (2011) who

found no relationship between the board structure and firm performance of banks in Ghana. In addition, Appendix K shows that the banking industry did not have low levels of board diversity and in some instances, this industry displayed some of the highest average values of the diversity measures such as with highest education band and age diversity. Accordingly, in this industry, this study's findings suggest that the argument for greater board diversity may be best centred on the ethical case for it rather than the economic or business case. The ethical argument emphasises the social responsibility of firms to avoid exclusion of different groups from the corporate elites on the basis of gender, age, race or other characteristics (Hagendorff & Keasey, 2012). This may be beneficial to firms in the banking sector who are under public scrutiny as diverse boards may create firm legitimacy in the eyes of its stakeholders (Carter et al., 2007).

Lastly, another industry that produced some interesting findings was the electricity, gas, water collection and sewerage sector (utilities industry). The findings revealed a significant and positive association between gender diversity, highest education band and Tobin's Q and no association between the other independent variables and Tobin's Q. In contrast when using ROE and ROA as dependent variables the findings in this industry display a negative association between gender diversity, multiple directorships and financial performance and no association between the other independent variables and ROE and ROA. Lastly, the variable highest experience band was automatically excluded from all three regression models by STATA due to collinearity. Other studies in the past have excluded utility companies from their sample and argued that this is because they have an additional layer of governance in the form of public utility commissions; therefore, their boards are different to other industries (Barnhart, Marr & Rosenstein, 1994; Li & Zhao, 2008). Further to this, Abbott and Cohen (2009) note that utility companies differ from other firms because they have conflicts between public objectives of their service, such as water services, and profit-maximisation sought by private partners. An earlier study by Agrawal and Knoeber (2001) argued that in the utilities sector, directors' networks with the government or directors with political backgrounds are more important. They further argue that in the 1990s competition in the electricity sector, for instance, became an important political issue to which electricity companies responded by increasing the

number of directors with political affiliations on their boards (Agrawal & Knoeber, 2001). Similarly, Kang et al. (2007) stated that companies that operate in industries with high political costs are more likely to have boards that are more independent in order to display their willingness to maintain good corporate governance practices. The mean value for the board index in this industry sector was 28 across all the years, which is fairly high and is evidence of a good quality of corporate governance board practices, however this had no association with financial performance. Therefore, similarly to the findings from the banking industry, it may be beneficial for companies in the utilities industry to maintain good corporate governance practices for public visibility and legitimacy purposes to its broad range of stakeholders (Carter et al., 2007).

The utilities industry findings on gender diversity are inconclusive as a positive association is found with Tobin's Q, which represents the market's perception, however a negative association is found with the accounting based measures ROE and ROA. In addition, these findings are in contrast to Romano and Guerrini (2014) who found that the percentage of females on the boards of water utility companies had no impact on both the economic and financial indicators that they used. The findings on highest education band supports the literature that states highly educated directors have greater knowledge and skills that are essential to the success of a firm (Bell et al., 2011). However, the findings on multiple directorships in this industry are consistent with the over-commitment view of multiple directorships that argues competing pressures from numerous board appointments create 'busy' directors who compromise firm performance (Nguyen et al., 2015). Romano and Guerrini (2014) note that literature on the utilities sector, particularly the water industry, lacks empirical studies that look at the relationship between board structure and performance in this industry. Therefore, this study contributes to the existing body of knowledge in the utilities industry by focusing on board diversity and financial performance. Overall, the results suggest that high levels of education improve financial performance in the utilities industry whereas multiple directorships are detrimental to financial performance in this industry.

6.10.1 Contribution to Knowledge

This thesis has attempted to address a gap in literature by testing the association between board diversity and financial performance within different industries to account for contextual factors. In so doing, the industry analysis contributes to the extant literature in various ways and the contribution to knowledge for each of the independent variables is discussed below.

Board Index

The findings from the industry analysis particularly contribute to knowledge in three ways. First, the findings suggest that maintaining good corporate governance practices does not always lead to improved firm performance, especially in industries with high political costs such as the crude petroleum industry. Second, the study finds strong evidence of a positive association between corporate governance practices and financial performance of firms in the accommodation, business support, construction, IT/media and manufacturing industries. Lastly, the study provides empirical evidence of a negative association between board practices and financial performance of firms in the financial services industry sector using a methodology that accounts for endogeneity. Overall, the findings in this study suggest that although theoretically good corporate governance practices lead to reduced agency costs, this is not always the case in every industry. It is important therefore to consider contextual factors when examining the link between corporate governance practices and financial performance. Nonetheless, the study concludes that, with the exception of the financial services sector, there is no negative impact on performance of maintaining good corporate governance practices as measured by the board index. The limitations of this study are discussed and acknowledged in the conclusion of the thesis in Chapter 7.

Age Diversity

This study adds to the small body of research on age diversity by investigating the impact of board age diversity on financial performance within an industry setting. The industry findings provide evidence that supports the notion one size does not fit all and the need for an age diverse board may be contingent on the context. Generally, the results of this study weaken the business case of age diversity on the boards that has been put forward in previous studies (Darmadi, 2011; Kang et al., 2007; Mahadeo et al., 2012,). However, the study contributes to practice and to knowledge by

suggesting that age diversity can positively impact financial performance when there are lower levels of age diversity on the board and particularly in industries that are high-tech such as the mining industry. Conversely, higher levels of age diversity may have negative impacts on financial performance, such as in the retail sales industry sector. This is consistent with the stream of literature that contends greater board diversity can involve greater costs as the coordination of a diverse group of individuals can be more difficult due to conflicts of opinions arising (Smith et al., 2006).

Gender Diversity

Post and Byron (2015) suggest that it is vital to consider different conditions and contexts that may affect the link between board gender diversity and performance. Therefore, this study contributes to the existing body of literature by employing an empirical methodology that addresses endogeneity and conducting an industry analysis of the findings in order to consider different contexts. The study concludes the following: first, the study concludes that there is a strong business case for gender diversity in service industries such as retail sales, wholesale and utilities sectors. Second, the study suggests that when the critical mass is not reached, particularly in male dominated industries such as the construction industry, there is no association between gender diversity and financial performance. Lastly, in industries such as the mining industry, that are associated with higher political costs and that have more willingness to maintain good corporate governance practices, there is a strong business case for gender diversity.

Highest Education Band

This study adds to the small body of literature on board education levels by providing empirical evidence of a positive association between directors' education levels and Tobin's Q in the electricity/water, mining, manufacturing and wholesale industry sectors. Further to this, the study provides strong evidence of a positive effect of directors' education levels in the manufacturing industry on both market based and accounting measures of performance. Finally, the study concludes that in practice, contextual factors must be considered when exploring the link between directors' education levels and financial performance. This is because although the multivariate

analysis in Chapter 5 displayed overall no association between the highest education band and financial performance, the industry analysis revealed that this is not the case for all industries. A future avenue of research that is consistent with Ararat et al.'s (2015) findings is that rather than focusing on highest levels of education, it could be that boards may benefit from diverse levels of education as directors with limited education may bring more intuitive skills and tacit knowledge whilst higher educated directors provide more analytical skills.

Education Diversity

Østergaard et al. (2011) note that prior studies that have examined the relationship between educational diversity and firm performance have produced mixed results and suggest various theoretical and methodological reasons for such inconsistencies. The most prominent conceptual reason for these inconsistent findings has been that the effect of educational diversity on firm performance is likely to be sample specific and dependent on certain contextual factors. This study adds to this existing body of knowledge by providing empirical evidence of the differing impact of educational diversity in different industries. This is in contrast to Ararat et al. (2015) who argue that educational diversity leads to more diverse perspectives in the decision-making process which enhances performance. This study further suggests that such a proposition is only applicable to certain industries, and in 'specialist' industries such as the crude petroleum industry, educational diversity has no impact on performance. In addition, in certain business environments, such as the accommodation and IT/media industries, educational diversity on the board negatively impacts performance. Therefore, industry effects must be taken into account when examining the impact of education diversity on performance.

Highest Experience Band

This study contributes to the existing body of literature by providing empirical evidence of the different impacts of highly experienced directors in different industries. In so doing, the study draws three conclusions. First, in contrast to Anderson et al. (2011) who state that shareholders place greater value on directors' education and experience rather than directors' gender and age, this study finds that in

the majority of industries there was no association between highest experience band and financial performance, whereas Section 6.3 provided greater evidence of an association with gender diversity. Second, the study finds strong evidence of a positive impact of highly experienced directors on the financial performance of firms in the accommodation and IT/media industries that have rapidly changing business environments and need quicker decision making. Third, the study suggests that in the construction industry, highly experienced directors provide a good signal of director quality to the market but do not necessarily improve the governance of the firm.

Experience Diversity

Generally, the industry findings contribute to the extant literature by suggesting that experience diversity on the board does not provide benefits to all firms, therefore, uniformly prescribing greater experience diversity on the board may not be an appropriate governance practice for all firms. Specifically, this study finds that experience diversity of directors has a positive impact on firms with moderate levels of experience diversity such as the retail sales, transport and management industries, with the exception of the crude petroleum industry. In addition, the construction industry displayed a positive association between highest experience band and Tobin's Q and a negative association between experience diversity and Tobin's Q. Therefore, the study proposes that firms in the construction industry may benefit more from having highly experienced directors rather than directors with diverse experience. Lastly, the study finds evidence of a negative association between experience diversity of directors and financial performance in the insurance industry, and concludes that in some contexts, experience diversity on the board can create conflict or hinder strategic change, which would have a negative impact on financial performance.

Multiple Directorships

The industry findings on the association between multiple directorships and financial performance contribute to the existing body of literature in three ways. First, the study finds evidence to support the literature that states multiple directorships can enhance the visibility and legitimacy of the firm through the prestige of directors. Particularly, this study suggests that directors with multiple directorships in the crude

petroleum industry can positively contribute to firm value and legitimacy through their prestige, visibility and connections. Second, the study extends prior literature by showing that in the retail sales and electricity /water industries, multiple directorships may lead to less effective monitoring which would increase agency costs and negatively impact performance. Lastly, the study's findings support the propositions of Lei and Deng (2014) and Sarkar and Sarkar's (2009) that it is not necessary to set strict limits on the number of directorships held on boards as this study finds very little evidence of a negative impact on firm value and performance.

6.10.2 Contribution to Practice

Terjesen et al. (2009) noted that due to the influence of a firm's external business environment it is important to conduct research at an industry level. Ooi et al. (2015) further note that previous studies that have focused on board diversity have not taken into account industry-specific factors, which may influence firm outcomes. Therefore, this study contributes to the existing body of knowledge, and to practice, by examining the link between board diversity and financial performance by grouping a sample of the FTSE 350 companies according to their economic activities (SIC codes). Despite the Financial Reporting Council in the UK encouraging compliance with codes of best practice for all firms, the findings from this thesis with regards to board diversity support the notion that 'one size does not fit all'. The thesis provides empirical evidence of which board diversity variables have a positive impact on financial performance in each industry and this is summarised in Table 6.4. These findings will be useful to board members, nomination committees and shareholders in creating boards that are well suited to perform their duties and in advancing the diversity agenda. In addition, to the best of the researcher's knowledge, this is the first study to examine the association between board diversity and financial performance in the business support and public administration, accommodation and food services and mining and quarrying industry sectors. Previous studies on board diversity and performance either have not explicitly examined these industry sectors in the UK context or they have only examined either gender diversity or board independence.

Table 6.6 Summary of Significant Board Diversity Variables per Industry

Industry Sector	*Significant and Positive Board Diversity Variables*	*Significant and Negative Board Diversity Variables*
Accommodation, Food & Beverages Services	Gender Diversity Highest Experience Band Board Index	Education Diversity
Banking	None	None
Business Support, Leasing, Employment, Public Administration	Board Index	Highest Experience Band
Construction and Development of Buildings	Education Diversity Highest Experience Band** Board Index	Experience Diversity Highest Experience Band**
Electricity, Gas, Water collection and Sewerage	Gender Diversity** Highest Education Band	Gender Diversity** Experience Diversity
Extraction of Crude Petroleum and Natural Gas	Experience Diversity Directorships	Gender Diversity
Financial Services, Auxiliary Services to Finance and Real Estate Activities	None	Board Index Education Diversity Highest Experience Band
Insurance	Experience Diversity** Age Diversity	Gender Diversity Experience Diversity**
IT, Media, Broadcasting and Publishing	Highest Experience Band Board Index Experience Diversity	Gender Diversity Education Diversity

Industry Sector	*Significant and Positive Board Diversity Variables*	*Significant and Negative Board Diversity Variables*
Management Consultancy, Head Offices Activities, Architectural and Engineering Services	Age Diversity** Education Diversity Experience Diversity**	Experience Diversity** Age Diversity** Highest Education Band
Manufacturing	Gender Diversity Highest Education Band Directorships Board Index	Highest Experience Band
Mining and Quarrying	Age Diversity Gender Diversity Highest Education Band Education Diversity Highest Experience Band Experience Diversity	None
Retail Sales, Gaming and Betting Activities	Gender Diversity Experience Diversity	Age Diversity Directorships
Telecommunications	None	None
Transport	Gender Diversity Experience Diversity Education Diversity	Age Diversity Highest Education Band
Wholesale	Gender Diversity Highest Education Band Highest Experience Band	Age Diversity

**These variables produce contradictory findings depending on the measure of financial performance i.e. market based vs. accounting based measures.

6.11 Summary of Chapter

This chapter has presented and discussed the multivariate analysis findings from each of the 16 industries represented in this study's sample. In so doing, this chapter has addressed research question 3 and identified that the association between board diversity and financial performance differs amongst industries. The chapter found that the association between age diversity and financial performance may have a curvilinear relationship, suggesting that lower levels of age diversity would be more beneficial. The chapter also found that in industries with high political costs, companies might be more willing to show their commitment to maintaining good corporate governance practices. In addition, the findings from the mining industry overall displayed a stronger business case for diversity in comparison to other industries. The chapter discussed the various implications of these findings to the existing body of knowledge and to practice and overall supports the notion that 'one size does not fit all' suggesting that the comply or explain system may not be the most conducive approach. The next chapter concludes this thesis by presenting a summary of the key literature, key findings and the overall contribution to knowledge and to practice.

CHAPTER 7 CONCLUSION

7.1 Introduction to Chapter

The aim of this thesis has been to investigate the relationship between board diversity and firm performance in UK listed companies. By drawing upon the business case for diversity, the thesis has utilised a multi-theory framework that has allowed both structural and demographic issues of diversity to be explored simultaneously. Accordingly, the study's research objective was *to examine the impact of board diversity on the financial performance of FTSE 350 companies in the UK*. This chapter provides the conclusion to the thesis and summarises the key literature, key findings and the contribution to knowledge. The chapter is structured as follows: Sections 7.2 to 7.4 discuss the key literature, key findings and contribution to knowledge relating to research question 1, 2 and 3, respectively. Section 7.5 discusses the study's overall contribution to practice whilst Section 7.6 discusses the limitations of this study. Section 7.7 discusses potential areas of further research and lastly Section 7.8 summarises this chapter. Table 7.1 presents a summary of this study's research overall.

Table 7.1 Summary of Thesis

Research Objective: *To examine the impact of board diversity on the financial performance of FTSE 350 companies in the UK*					
Research Question	**Relevant Literature**	**Underlying Theories**	**Research Method employed**	**Findings and Results**	**Further work**
***Research Question 1*: Which theoretical framework is the best modelling tool of board diversity and financial performance?**	Gaps in literature displayed a need to adopt a multi-theory perspective alongside several calls from previous researchers. Section 2.7 of Chapter 2.	Integration of Upper echelons, Resource dependence and Agency theories. *Discussed in Chapter 3.*	OLS Regression Akaike Information Criteria *Discussed in Section 5.5 of Chapter 5.*	Model with variables derived from this study's theoretical framework was the most parsimonious model. *Discussed in Section 5.5 of Chapter 5.*	Theoretical framework developed can be used on other samples in future research, alongside inclusion of ethnicity as a measure of diversity. *Discussed in Sections 7.6 and 7.7 of Chapter 7.*
***Research Question 2*: Is there a relationship between board diversity and financial performance?**	Literature on board homogeneity vs heterogeneity is discussed in Section 2.5 of Chapter 2. Different board characteristics that act as diversity measures are discussed in Section 3.3 of Chapter 3.	Integration of Upper echelons, Resource dependence and Agency theories. *Discussed in Chapter 3.*	2SLS Regression GLS Regression *Discussed in Section 5.7 of Chapter 5.*	Positive association found between gender diversity, experience diversity, multiple directorships and financial performance. No association found between age diversity, education level, education diversity, experience level, board index and financial performance. *Discussed in Section 5.7 of Chapter 5.*	Future research may examine differences between executive and non-executive female directors' roles and influence on the board. Further work may also consider whether younger or older directors are preferable on boards in improving the financial performance of firms. *Discussed in Section 7.7 of Chapter 7.*

Research Question	Relevant Literature	Underlying Theories	Research Method employed	Findings and Results	Further work
***Research Question 3*: Does the relationship between board diversity and financial performance differ amongst industries?**	Literature on board homogeneity vs heterogeneity is discussed in Section 2.5 of Chapter 2. Different board characteristics that act as diversity measures are discussed in Section 3.3 of Chapter 3.	Integration of Upper echelons, Resource dependence and Agency theories. *Discussed in Chapter 3.*	2SLS Regression GLS Regression *Discussed in Chapter 6.*	The relationship between board diversity and financial performance differs in industries. The mining industry sector displayed the strongest business case for board diversity in comparison with other industries. *Discussed in Chapter 6.*	Future research could investigate whether age diversity on boards has a curvilinear relationship with financial performance to gain more insights into the nature of this relationship, particularly in the retail sales industry sector. Further work may also examine the impact of board diversity and financial performance in industries such as business support and public administration, accommodation and food services and mining and quarrying industry sectors where there is limited research on this topic. *Discussed in Section 7.7 of Chapter 7.*

7.2 Research Question 1

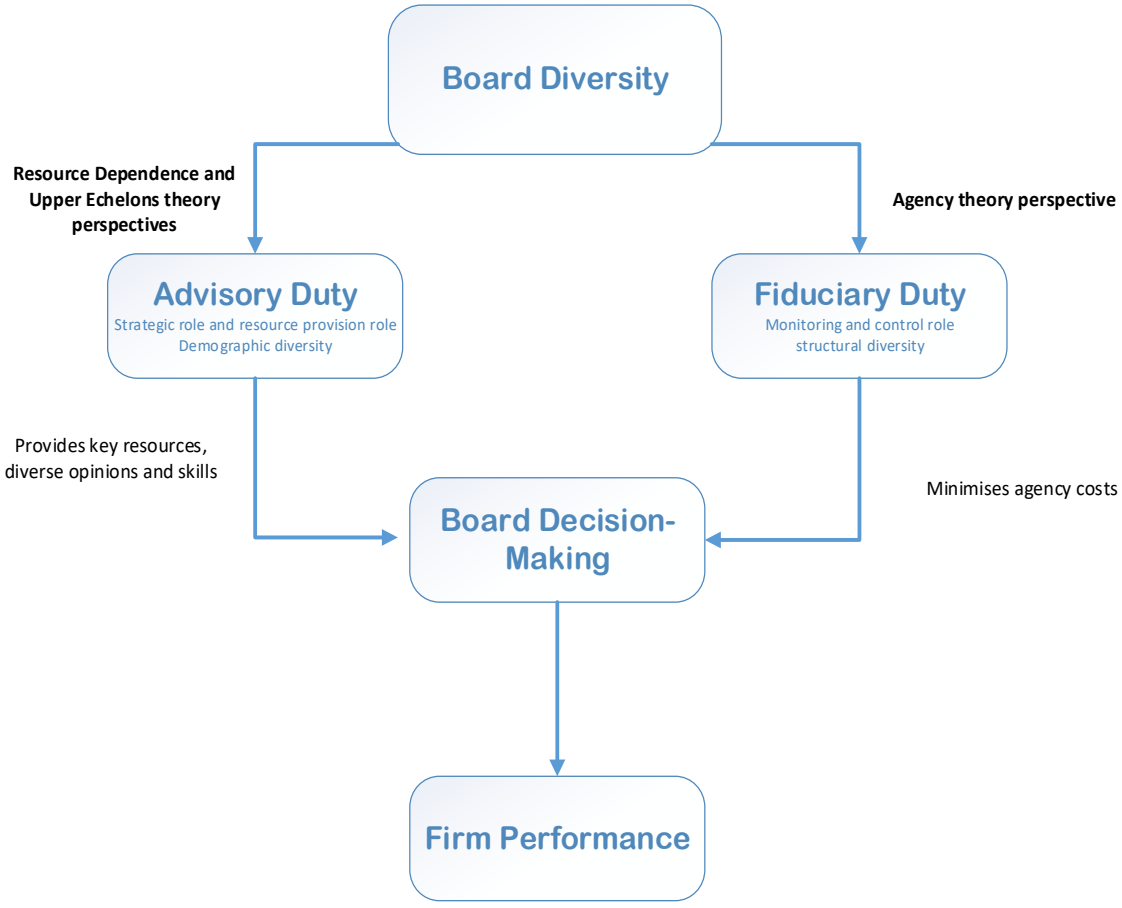
This study's first research question was, *which theoretical framework is the best modelling tool of board diversity and financial performance?* This research question sought to identify a theoretical framework that best addressed the different functions of boards and allowed both structural and demographic issues of diversity to be explored. Research question 1 was addressed in three ways. First, in Chapter 2 of the literature review, a review and suitability of previous corporate governance theories was discussed. This discussion highlighted that the majority of literature in previous corporate governance studies is dominated by a single theoretical framework and does not integrate different theories. Second, the chosen theoretical framework of the study that comprises agency, resource dependence and upper echelons theories was discussed in Chapter 3 and this chapter also provided a synthesis of the three theories. Lastly, research question 1 was addressed in Chapter 5 by evaluating four OLS models and AIC scores comprised of different variables in order to find the model that best explained any variations in the dependent variable.

7.2.1 Key Literature

Ntim (2015) notes that scholars who advocate for greater diversity in the boardroom typically base their arguments on either agency, resource dependence or stakeholder theories. Agency theory has been predominantly used in the majority of prior corporate governance studies, however scholars argue that agency theory solely focuses on directors' monitoring and control role (Petrovic, 2008). In addition, agency theory does not recognise that directors may differ in their capabilities and skills when exercising their duties and it does not fully acknowledge the fact that directors are a social group that is part of a highly dynamic system influenced by their cognitive ability (Nicholson & Kiel, 2004; Petrovic, 2008). Stakeholder theory is commonly used in diversity studies that focus more on the social responsibilities of firms and the ethical arguments for diversity rather than the business case (Bear et al., 2010; Francoeur et al., 2008). With regards to resource dependence theory, Carter et al. (2010) state that resource dependence theory provides a good basis for some of the most influential theoretical arguments that advocate a business case for board

diversity. However, resource dependence theory focuses more on the resource provision role of directors (Pfeffer & Salancik, 1978). Therefore, Hillman et al. (2009) stated that it is not sufficient on its own and should be integrated with other theories in order to offer new insights on the phenomenon of interest. In light of this, the literature review identified the need for a multi-theory perspective that takes into account the different dimensions of diversity and the different functions of the board of directors. Therefore, this thesis integrated upper echelons, resource dependence and agency theories and the basic conceptual model of the study is presented again in Figure 7.1.

Figure 7.1 Thesis Conceptual Framework



Jermias and Gani (2014) suggest empirical studies using agency theory have produced inconclusive results because of a myopic focus on the monitoring function of boards, ignoring other functions such as the resources provision and strategic roles

of directors. Therefore, the results from Zattoni and Van Ees's (2012) study, and other researchers, propose that a promising avenue for future governance research is to utilise other theoretical paradigms or to combine two or more theoretical frameworks to bridge this gap in the literature (Daily et al., 2003; Huse et al., 2011). The study's chosen theoretical framework addressed this gap by utilising the agency theory to address directors' monitoring role and identify issues of structural diversity such as board independence, CEO duality and board committees. Resource dependence theory is utilised to address directors' resource provision role and it identifies some demographic diversity attributes such as educational background, experience and multiple directorships. Lastly, upper echelons theory is used to address directors' strategic and service role and identifies demographic diversity attributes such as age, gender, education background, experience and multiple directorships.

7.2.2 Key Findings

This thesis synthesises upper echelons, resource dependence and agency theories in the following ways. First, the three theories together take into account the multiple roles and functions that directors play on boards which include evaluating the firm's strategies, monitoring and controlling managers, linking the firm to the external business environment and the appointment and remuneration of senior executives (Nahar-Abdullah, 2004; Campbell & Mínguez-Vera, 2008; Kuhç & Kuzey, 2016). Second, upper echelons theory proposes that in order to understand why organisations perform the way they do, researchers must consider the biases and dispositions of their top executives (Hambrick and Mason, 1984). However, this theory omits a broader set of position holders, namely the board of directors, who are arguably the most powerful actors in the firm from both an agency and resource dependence theory perspective (Bhagat & Bolton, 2008). Third, an amendment of upper echelons theory by Hambrick (2007) proposed that the upper echelons of senior executives will be poor predictors of performance because the CEO will have the greatest power and influence on the decision making process. This proposal highlighted the limitation of upper echelons theory in excluding structural issues of diversity that are identified by agency theory, such as board independence and CEO duality which are both aimed at eliminating issues of power and ensuring that no one individual has 'unfettered powers of decision' (Financial Reporting Council, 2014). Lastly, agency theory does not

recognise that not every board is well suited to perform their duty and it does not entirely recognise unique attributes that individual directors may bring to the board in improving effectiveness which are recognised by resource dependence and upper echelons theories.

In summary, the study's theoretical framework postulates that the board of directors, who are the most powerful actors in the firm, can be more effective in performing multiple board functions when there is both structural and demographic diversity on the board. This in turn, is proposed to enhance the decision-making process of the board and improve firm performance. In Chapter 5, OLS regressions were run on four models. The first model was based on the variables found from this study's theoretical framework, the second, third and fourth models were individually based on variables derived from agency theory, resource dependence theory and upper echelons theory, respectively. Through examining the Rsquared and RMSE values of each model, the findings revealed that model one explained the greatest proportion of the variation on the dependent variable by the independent variables. The results also showed that model one overall had a better fit than the other models. In addition, further analysis using the Akaike information criteria revealed that model one was the most parsimonious model. Although the difference between models one and four was minimal, the rationale of parsimony is not based on statistical significance, rather it is based on precision of estimation. Therefore, the model that is closest to having the least assumptions and the greatest explanatory power in the analysis is considered the best fitting model (Bentler & Mooijaart, 1989). Overall, the results revealed that model one, with the variables derived from the integrated theories, was a better fitting model than the models with variables from the individual theories. Hence the proposal to adopt, and the benefit of adopting, a multi-theory framework is justified.

7.2.3 Contribution to Knowledge

A recent review of the literature on board diversity studies in the past decade by Kagzi and Guha (2018) proposes various opportunities for future studies to consider when investigating board diversity. This thesis explores several of their recommendations and propositions. In regards to theoretical perspectives, they

propose that future researchers should explore the relationship between board diversity and firm performance by integrating various theories (Kagzi & Guha, 2018). To the best of the researcher's knowledge, this study is the first in the literature to integrate agency, resource dependence and upper echelons theories and in so doing, the study makes a theoretical contribution to knowledge. Specifically, this thesis makes two major contributions to the literature. First, by extending Haynes and Hillman's (2010) and Jermias and Gani's (2014) work, this study integrates agency, resource dependence and upper echelons theories and thus contributes in overcoming the dominant and current myopia within the three streams of research based on a single theory perspective and provides a more complete lens for exploring the link between board diversity and financial performance. In addition, the study provides empirical evidence that justifies the choice and adoption of the multi-theory framework utilised in this thesis. Second, in contrast to the majority of literature in corporate governance, the study contributes to literature by highlighting the major limitations of solely relying on agency theory when exploring board diversity. That is, agency theory does not take into account the multiple roles of directors, it does not entirely consider demographic diversity neither does it recognise that directors may require different skills in order to effectively exercise their duties including their monitoring role. The analysis of the different models in Chapter 5 further revealed that the model with variables derived from agency theory alone had the least predictive power. Overall, this thesis directly responds to calls by Jermias and Gani (2014) and Zattoni and Van Ees (2012) by providing a theoretical and conceptual framework that 'bridges the gap' in corporate governance literature examining board diversity.

7.3 Research Question 2

This study's second research question was, *is there a relationship between board diversity and financial performance?* This research question sought to identify the board characteristics and attributes of diversity that have an association with financial performance. Research question 2 was addressed in three ways. First, in Chapter 3, the study's theoretical framework identified structural and demographic attributes of the board of directors that can proxy diversity in the boardroom. The chapter also developed hypotheses to be tested. The board diversity variables used in this study were directors' age, gender, education, experience, networks and a board index was

constructed to measure board practices. Second, in Chapter 4, the measures of each of these variables were discussed in line with the extant literature and the study's theoretical framework. In addition, Chapter 4 discussed the construction of the board index that was based on the recommendations of the UK Corporate Governance Code 2014. Lastly, the second research question was mainly addressed in Chapter 5, where the multivariate regression results were presented and discussed.

7.3.1 Key Literature

Corporate governance literature contends that board structure strongly influences the actions and effectiveness of a board, which ultimately impacts firm performance (Kim, Burns & Prescott, 2009). One important dimension of board structure is the diversity of the board. However, since the 1990s, the majority of large UK firms have been homogenously composed of white, middle class, older men with similar professional and educational backgrounds (Ararat et al., 2015; Brammer et al., 2007; Useem, 1993; Wang & Clift, 2009). This study's theoretical framework, together with scholars who advocate for diversity suggest that boards comprised of directors with a wide range of skills, expertise and backgrounds will be more effective in their functions and will enhance the board's decision-making process (Adams et al., 2015). However, other scholars argue that heterogeneous or diverse boards may slow down the decision-making process and constrain strategic changes in the firm as their different perspectives may make it more difficult for a consensus to be reached (Marinova et al., 2016). Whilst it is recognised that some scholars indicate board heterogeneity may cause more disagreements, it is argued that generally boards with a diverse set of directors will have the capability to objectively and carefully evaluate alternatives with added insights (Low et al., 2015). The empirical evidence on board diversity and firm performance has produced mixed results and the majority of these studies have focused on examining the link between gender diversity and firm performance, with less attention being paid to other diversity attributes (Post & Byron, 2015). Therefore, one of the gaps in literature identified in Chapter 2 was the need for academic research to adopt a much wider focus on other aspects of diversity, besides just gender diversity, in building a business case for diversity in the boardroom.

7.3.2 Key Findings

The study mainly utilised two stage least squares regression and generalised least squares regression to test the association between the diversity measures and financial performance proxied by Tobin's Q, ROE and ROA. The summary of the findings and hypotheses is summarised in Table 7.2.

Table 7.2 Summary of Hypothesis Findings

	Research Hypotheses							
Dependent Variable	**H1** (Board Index)	**H2** (Age Diversity)	**H3** (Gender Diversity)	**H4** (Education Level)	**H5** (Education Diversity)	**H6** (Experience Level)	**H7** (Experience Diversity)	**H8** (Multiple Directorships)
Tobin's Q	rejected*****	rejected	**confirmed**	rejected	rejected	rejected*	rejected	**confirmed**
ROE	rejected	rejected	**confirmed**	rejected	rejected	rejected	**confirmed**	rejected
ROA	rejected	rejected	**confirmed**	rejected	rejected	rejected	rejected*****	rejected

*there is evidence of an association at the 10% significance level.

Table 7.2 reveals that the study's first hypothesis was rejected as no association is found between the board index and financial performance. Hypothesis 2 was rejected as no association was found between the age diversity of directors and financial performance. The discussion in Chapter 5 suggested that this could be due to the different risk appetites of younger and older directors balancing each other out. Hypothesis 3 is confirmed as a positive and significant association was found between gender diversity and all the measures of financial performance. This suggests that the presence of women on boards makes boards more effective in their roles and enhances the decision making process. Hypotheses 4 and 5 are both rejected as no association is found between directors' education levels, education diversity and financial performance. This suggests that the educational background of directors neither improves nor worsens performance. Hypothesis 6 is also rejected as no association is found between higher levels of experience and financial performance. Hypothesis 7 is confirmed as a positive and significant association is found between experience diversity and ROE, suggesting that directors with diverse experience contribute

positively to the board through their diverse perspectives and skills. In regards to multiple directorships, hypothesis 8 is confirmed as a positive and significant association is found with Tobin's Q, suggesting that multiple directorships produce higher quality directors who are more effective in their board roles.

7.3.3 Contribution to Knowledge

This study contributes to the extant literature and existing body of knowledge in several ways. First, the study responds to calls by Hillman (2015), Adams et al. (2015) and Kagzi and Guha (2018) that propose research on board diversity must venture into other aspects of diversity besides gender. This is in order to truly understand boardroom diversity and be able to inform practice and policy effectively. Specifically, the findings from the overall analysis in this thesis display that there is a business case for gender diversity, experience diversity and multiple directorships in the boardroom. Although the findings do not display a business case for age diversity and educational background, the results do not reveal that these attributes worsen performance either. Therefore, this suggests that the argument for these measures should be based on other criteria such as the ethical argument for diversity in line with the normative side of the stakeholder theory. Further to this, the study's findings refute the propositions of scholars, such as Li and Hambrick (2005), who suggest that board diversity is associated with cognitive conflict and obstructs the board's decision-making process leading to a decrease in firm performance. Additionally, this study's findings contradict Anderson et al. (2011) who proposed that shareholders place greater value on directors' education, experience and profession than their gender and age. The results from this thesis find that gender diversity had a positive association with Tobin's Q, which is a market measure, and experience diversity had no association with Tobin's Q but had an association with ROE which is an accounting based measure.

Second, Kagzi and Guha (2018) note that although research on the age diversity of directors has received much less attention, the existing literature has shown conflicting findings. Therefore, they propose that more research needs to be conducted to establish the nature of the effects of age diversity in corporate boards

(Kagzi & Guha, 2018). This thesis adds to the existing body of literature by providing empirical evidence of no association between the age diversity of directors and financial performance. Notably, scholars suggest that prior research in corporate governance and board diversity produces inconsistent findings due to several methodological issues not being addressed (Adams et al., 2015). This is evidenced in this thesis as the results in Chapter 5 revealed a significant and negative association between age diversity and financial performance when using OLS and GLS regressions. However, in the regression diagnostics in Chapter 4, it was noted that age diversity was an endogenous variable therefore in this case, 2SLS regression is a more reliable regression estimator as it accounts for endogeneity. In contrast to the OLS and GLS results, the results from 2SLS revealed no association between age diversity and financial performance. Therefore, this thesis provides more robust and reliable findings on the nature of the association between age diversity and financial performance.

Third, this thesis contributes to knowledge by providing empirical evidence of a positive and significant association between multiple directorships and Tobin's Q. Martin et al. (2015) noted that previous studies that have examined the association between multiple directorships and firm performance have been criticised for not accounting for endogeneity in their analysis. This study identified that 'multiple directorships' is an endogenous variable. Therefore, this study contributes to and extends prior work by providing more empirical evidence that confirms a significant and positive association between multiple directorships and financial performance using a rigorous methodology that accounts for endogeneity. This finding disproves the 'busyness hypothesis' that contends directors' external ties make them too busy and less committed, which results in negative firm performance (Jiraporn et al., 2008). This study suggests that multiple directorships produce higher quality directors who are more effective in their monitoring, resource provision and strategic roles through the invaluable experience they gain from serving on other boards. This finding also has an implication on policy, in that it supports the work of Lei and Deng (2014) and Sarkar and Sarkar (2009) who propose that it is not necessary for codes of best practice and regulation to set strict limits on the number of external directorships held by directors, as there is very little evidence of a negative impact on performance.

Fourth, Hagendorff and Keasey (2012) note that the extant literature on board diversity largely concentrates on observable measure of demography such as gender and race, however this literature limits itself in making more general inferences about the impact of diversity in the boardroom. In line with this, this thesis contributes to the existing body of knowledge by focusing on a wider range of diversity attributes including non-observable measures such as education and experience. In particular, this study provides empirical evidence of a positive association between the experience diversity of directors and accounting based measures of financial performance. Khanna et al. (2014) state that accounting based measures of performance are better indicators of the effectiveness of corporate governance practices than market-based measures, which reflect investor perception. In light of this, this study concludes that the experience diversity of the board reflects the different skills and perspectives that directors bring to their jobs, which make them more effective in their roles and ultimately leads to improved performance.

Fifth, this study contributes to knowledge by assessing the structural diversity of boards that goes beyond the conventional measures of CEO duality and board independence and it constructs a board index that is tailored to listed companies in the UK. There are a limited number of studies in the UK that have utilised corporate governance indices when examining the link between corporate governance or board composition and firm performance (Mouselli, Abdulraouf & Jaafar, 2014; Renders et al., 2010). To the best of the researcher's knowledge, this is one of the first studies that constructs a board index that is focused on board practices and is based on the recommendations of the Corporate Governance Code 2014. The board index that was constructed addresses several aspects of corporate governance that broadly fall under five categories of the code: leadership, effectiveness, accountability, remuneration and relations with shareholders. Akbar et al. (2016) argue that when investigating the relationship between corporate governance and performance, a methodology that takes into account the possibility of endogeneity must be utilised. In line with this, the thesis adds to the literature by using a comprehensive and robust econometric approach that takes into account the endogenous nature of the relationship between corporate

governance and performance and provides empirical evidence of no association between the two. Theoretically, the results are unexpected, however in practice, the results may suggest that compliance with corporate governance recommendations may not necessarily lead to improved performance.

Sixth, Carter et al. (2010) and Ferreira (2015) conclude that current research does not support a business case for gender diversity in the boardroom. As a result, Ferreira (2015) further proposes that when discussing the progression of women and gender quotas, it is better for policy initiatives to focus more on the ethical case and social benefits of gender diversity. This thesis does not disprove this notion, rather it extends this work by providing empirical evidence of a strong business case for gender diversity on boards. This study's results support public policy initiatives for quotas of women on boards based on the grounds that gender diversity improves the financial performance of the firm. In addition, the study supports the proposal of the EU commission to promote gender equality and diversity in corporate boards in line with the Europe 2020 objectives. This proposal is not only motivated by equality concerns but also refers to the business case, citing that gender diversity on boards is a key driver of firm performance (European Commission, 2012b). Although the proposal states that several studies have shown a positive relationship between gender diversity and financial performance, Marinova et al. (2016) note that the majority of research in European countries depicts negative results on the relationship between gender diversity and financial performance. Therefore, this study further contributes to both knowledge and practice by providing more positive results, in the European context, of a positive association between gender diversity and different measures of financial performance in a sample of UK firms. Studies such as this thesis are useful in providing empirical evidence to support the proposals of public policy initiatives.

Lastly, Carter et al. (2010) observe that the academic literature on the relationship between board diversity and financial performance is still rather thin with a limited number of studies applying a more sophisticated methodology that accounts for various econometric issues. In response to this Marinova et al. (2016) note that their study contributes to the extant literature by applying a more sophisticated

methodology in which they use 2SLS on a relatively small data set and based on one year. Adams and Ferreira (2009) note that a concern in using such techniques is the difficulty in finding valid instruments. Further to this, Larcker and Rusticus (2010) noted that the instruments used are usually not fully tested for validity and relevance. This study therefore contributes to the existing body of literature by using a more sophisticated methodology on a data set that comprises both cross sectional and times series data. In addition, the instrumental variables used in this study, namely total equity, total sales, capital intensity, operating margin, length of operating cycle and sales growth, were all properly tested for both validity and reliability and were found to be plausible instruments. Wintoki et al. (2012) stated that although instrumental variables techniques can mitigate endogeneity, in corporate governance studies it is difficult to find instruments that are not affected by any firm characteristics. Therefore, consistent with Jermias and Gani (2014), the findings from this thesis suggest that the instrumental variables used in this study are credible instruments for corporate governance that can be used by future researchers, as there is no a *priori* reason for these variables to be endogenous to firm performance or corporate governance.

7.4 Research Question 3

This study's third research question was, *does the relationship between board diversity and financial performance differ amongst industries?* This research question follows on from the second research question and seeks to explore any differences amongst industry sectors in line with the notion 'one size does not fit all'. Research question 3 is mainly addressed in Chapter 6 where the industry analysis results are presented and discussed. The study's sample was grouped into 16 industries according to SIC codes, which classify companies in industry sectors according to the economic activities they are engaged in.

7.4.1 Key Literature

The 'one size does not fit all' notion suggests that corporate governance practices are not universal and vary across countries, markets and industries (Kelton & Yang, 2008). This is consistent with the contingency theory that can be applied to board diversity studies by suggesting that certain diversity measures may be more

desirable in some firms and not in others under various circumstances (Fielder, 1967). The literature reviewed in Chapter 2 noted that prior studies on board diversity and financial performance may have produced mixed findings because contextual factors were not taken into consideration. Therefore, in order to address this gap in the literature, Johnson et al. (2013) call for future studies on board diversity to investigate contextual factors in helping to reconcile conflicting findings in the literature, and one of these contextual factors is industry differences. In regards to the study's theoretical framework, Aguilera et al. (2008) state that the 'under-contextualised' nature of agency theory framework limits its ability to explain the diversity of corporate governance practices in different institutional contexts. In addition, Hiebl (2013) notes that contradictory results on certain upper echelons characteristics may be attributable to different industries as one size or structure may not fit all. Filatotchev and Allcock (2010) state that from a resource dependence theory perspective, it can be argued that the role and effects of corporate governance practices may differ in ways that are contingent upon the vital external and internal resources within the context of the firm's market or sector.

7.4.2 Key Findings

The industry findings were summarised in Tables 6.2 to 6.4 in Chapter 6 of this thesis. The summary of the findings and hypotheses from the industry analysis is displayed in Table 7.3.

Table 7.3 Summary of Hypotheses from Industry Findings

	Research Hypotheses							
Dependent Variable	**H9** (Board Index)	**H10** (Age Diversity)	**H11** (Gender Diversity)	**H12** (Education Level)	**H13** (Education Diversity)	**H14** (Experience Level)	**H15** (Experience Diversity)	**H16** (Multiple Directorships)
Tobin's Q	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**
ROE	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**
ROA	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**	**confirmed**

Looking at age diversity, the industry analysis findings suggest that age diversity can positively impact financial performance when there are lower levels of age diversity on the board, particularly in industries that are high-tech such as the mining industry. Conversely, higher levels of age diversity may have negative impacts on financial performance, such as in the retail sales industry sector, this is consistent with the idea of a curvilinear relationship. With regards to gender diversity, the industry findings suggest that there is strong business case for gender diversity in service industries such as retail sales, wholesale and utilities sectors. In addition, the industry findings suggest that when the critical mass is not reached, particularly in male dominated industries such as the construction industry, there is no association between gender diversity and financial performance. The industry findings on highest education level displayed evidence of a positive association between directors' education levels and Tobin's Q in the electricity/water, mining, manufacturing and wholesale industry sectors. However, the industry findings on education diversity suggests that in 'specialist' industries such as the crude petroleum industry, educational diversity has no impact on performance. In addition, in certain business environments, such as the accommodation and IT/media industries, educational diversity on the board negatively impacts performance.

The industry findings on the board index display strong evidence of a positive association between corporate governance practices and financial performance of firms in the accommodation, business support, construction, IT/media and manufacturing industries. The industry findings on the variable highest experience band show strong evidence of the positive impact of highly experienced directors on the financial performance of firms in the accommodation and IT/media industries that have rapidly changing business environments and need quicker decision making. In addition, the findings suggest that in the construction industry, highly experienced directors provide a good signal of director quality to the market but do not necessarily improve the governance of the firm. With regards to experience diversity, the industry analysis finds that experience diversity of directors has a positive impact on firms with

moderate levels of experience diversity such as the retail sales, transport and management industries, with the exception of the crude petroleum industry. In addition, the construction industry displayed a positive association between highest experience band and Tobin's Q and a negative association between experience diversity and Tobin's Q. Therefore, the findings suggest that firms in the construction industry may benefit more from having highly experienced directors rather than directors with diverse experience. Lastly, the industry findings on multiple directorships suggest that directors with multiple directorships in the crude petroleum industry can positively contribute to firm value whereas in the retail sales and electricity/water industries, multiple directorships may lead to less effective monitoring which would increase agency costs and negatively impact performance. Overall, the results from the industry analysis suggest that it is important to examine board diversity and financial performance within 'an industry' in order to gain more insights, because one size may not always fit all.

7.4.3 Contribution to Knowledge

Kagzi and Guha's (2018) review of board diversity studies highlighted that future research should examine how the type of industry can moderate the relationship between board diversity and firm performance. This thesis contributes to knowledge by examining the link between board diversity and financial performance within industry settings and provides empirical evidence of the board diversity variables that have a positive impact on financial performance in each industry. As mentioned in Chapter 1, the Barclays (2010) annual report states that corporate governance frameworks should recognise that 'one size does not always fit all' and, allow firms to operate in ways that suit the needs and challenges they face. Therefore, the findings from the industry analysis in this thesis will be useful to board members, nomination committees and shareholders in creating boards that are well suited to perform their duties. To the best of the researcher's knowledge, this study is the first to examine the association between board diversity and financial performance in the business support and public administration, accommodation and food services and mining and quarrying industry sectors. Previous studies on board diversity and performance have either not explicitly examined these industry sectors in the UK context or they have only examined either gender diversity or board independence. More specifically, the

study adds to knowledge and practice by proposing that in industries such as mining, that are associated with higher political costs and that have more willingness to maintain good corporate governance practices, there is a strong business case for diversity in the boardroom. Conversely, this study suggests that in the financial services and banking industries, there is no business case for board diversity and the findings imply that the case for board diversity in these industries should be based on criteria other than financial performance.

7.5 Contribution to Practice

This thesis displays an association between board diversity and financial performance both in general and within industries. The findings of this thesis can be used by regulators in formulating recommendations that are related to the desirable attributes of boards and in advancing the discussion on diversity in the boardroom. This may help in improving public initiatives and policy on board diversity in the UK and within the European context. Board members and shareholders may also benefit from this study's findings in creating boards that are more diligent and effective in their functions and multiple roles. Some of the practical recommendations that current directors, nomination committees and shareholders can consider are as follows. Overall this study's findings present a strong business case for increasing gender diversity on boards and weakens the argument that a critical mass has to be reached in order for gender diversity to have an impact on performance (Konrad et al., 2008). In this study, for instance, the mining industry had an average of 6% of women on the board but still displayed a positive impact on firm performance. This study also provides very little evidence of the idea that directors with multiple directorships are less committed and less effective in their roles. Rather, this study overall displays evidence of a positive association between multiple directorships and financial performance. Lastly, nomination committees may also consider appointing directors with a mix of professional experience and functional backgrounds as this study shows that there is a business case for experience diversity in the boardroom.

7.6 Limitations of Study

Although this study makes several contributions to knowledge, literature and practice, there are also some limitations that should be acknowledged. First, the study's sample was limited to UK listed companies and the sampling procedure was not straight forward, as some companies were not consistently listed in the sample period over the years. As a result the sample screening method used, limited the total number of firms in the sample to 198 companies listed on the London Stock Exchange between the years 2004 and 2014. However, the size of this study's sample is comparable with other studies that have examined corporate governance and board diversity (Mahadeo et al., 2012; Mallin & Ow-Yong, 2012; Marinova et al., 2016). Second, this study utilises a self-constructed board index to examine the board practices and structures of the sample and to proxy structural diversity in the study. However, the constructed index may potentially have some reliability and validity issues. The process of selecting governance provisions in self-constructed indices may be tainted with subjectivity, therefore Bozec et al. (2010) propose that testing the validity of the index can help to signal the reliability and robustness of the index. In this regard, the Cronbach's Alpha tests results presented in Chapter 4 revealed that the items in the index constructed had an acceptable internal consistency suggesting that the board index is reliable.

Third, although OLS, 2SLS and GLS regressions were applied in this research other regression methods such as 3SLS and GMM estimation could have been used. Lastly, another limitation of this study is that it did not take into account the ethnic diversity of directors as a measure of board diversity as suggested by the extant literature and the theoretical framework adopted. This was mainly due to data availability, as many companies particularly in the first half of the sample period did not disclose this information. This is a variable that future research could explore further using the techniques and conceptual framework employed in this study. The limitations discussed should be taken into account when interpreting this study's results and the findings should not be generalised to all firms, as the sample is restricted to listed companies. Finally, although this thesis focused on the business case for board diversity, the ethical case based on equity and fairness is not ruled out, rather the two work hand in hand in advancing the diversity agenda. The notion of

equal opportunities is aligned with calls for firms to be more socially responsible, however this was beyond the scope of this research.

7.7 Areas for Future Research

This thesis has identified several avenues that can be pursued by future research on board diversity and these will be discussed in turn. First, the results from this study, overall, show a strong business case for gender diversity, however the progress in this area has still been relatively slow. Therefore, future research can explore the causes of this slow advancement of women on boards and potentially examine the barriers that exist to female leadership both within the UK and globally. In line with this, the correlation matrix in Appendix F displayed that the highest education band variable was positively correlated with gender diversity. Smith et al. (2006) found that the presence of senior female executives on the board had a larger effect on performance when the females were highly educated. In addition, Kakabadse et al. (2015) conducted a qualitative study on the perspectives of women in the boardroom and cited one of the participants contending that in comparison to male directors, female directors must have higher educational qualifications to be part of the board and to be effective. *"…Whether explicitly or implicitly stated, the necessary resources that a woman needs to have in order to penetrate the boardroom are commitment, an effective network, and sound education...*" (Kakabadse, et al., 2015, p. 271). Therefore, future research can look into whether level of education is one of the barriers to the progression of female leadership, or if it is a prerequisite for females to gain top positions on boards. This line of inquiry can also be extended by future researchers through examining the differences between executive and non-executive female director roles and any differences in the barriers faced.

With regards to public policy initiatives, researchers could further explore whether mandatory gender quotas are more effective than the softer comply or explain approach in regards to gender diversity. As noted in Chapter 5, the progress of increasing the number of women on boards has been greater in European countries with gender quotas than those without mandatory quotas. From an industry perspective, the industry findings revealed that there was no business case for gender

diversity in the banking and financial services industries. Hillman (2015) suggests that the major reason why financial markets may not value gender diversity resulting in negative financial performance is that investors' may perceive that female directors may harm the future prospects of the company. Hillman (2015) further states that the finance and investment profession has been historically dominated by men who may be biased against greater gender diversity. This line of thinking has not been adequately substantiated in the literature and is an opportune avenue for future research.

With regards to age diversity, the descriptive statistics presented in Chapter 5 showed that the mean value of age diversity did not represent high or low levels of diversity. Therefore, the results did not indicate whether older or younger directors would be preferable to improve the financial performance of the company. As no association was found between age diversity and financial performance overall, an area that could be explored further is whether the market values the experience of older directors or the dynamics and potential creativity of younger directors. In other words, if there is no business case for age diversity, research could look into whether older or younger directors are preferable on boards. From the industry analysis, future research could also investigate whether age diversity on boards has a curvilinear relationship with financial performance to gain more insights into the nature of this relationship, particularly in the retail sales industry sector. Lastly, future research could also investigate a larger sample size of the mining industry as there was a stronger case for business diversity in this industry compared to the other industries. Little research has been conducted on this industry in corporate governance, therefore there is potential for more insights to be unravelled. Overall, there is still more work and research to be done in advancing the board diversity agenda through identifying attributes that create successful and effective boards. This is summed up well by the Board Agenda (2018) as follows:

"*…an effective board is only as good as the parts and processes that go into it, but it also takes strong leadership to pull together the different elements in a cohesive and insightful way in order to become truly effective...*" (Board Agenda, 2018).

7.8 Summary of Chapter

The main aim of this chapter has been to conclude the thesis by providing a summary of the key literature, key findings and the contribution to knowledge for each of the study's three research questions. In addition, the study's contribution to practice and areas upon which future research may focus upon have been discussed. The study found that gender diversity, experience diversity and multiple directorships have a positive association with financial performance. However, the findings from the industry analysis revealed that the association between board diversity measures and financial performance differs between industries. This highlights the importance of considering contextual factors when examining the link between board diversity and financial performance in firms. This study also concludes that there is a need to utilise theoretical paradigms that combine multiple theories when assessing the link between board diversity and financial performance, such as an integration of agency, resource dependence and upper echelons theories.

References

Abbott, M., & Cohen, B. (2009). Productivity and efficiency in the water industry. *Utilities Policy*, *17*(3-4), 233-244.

Abdullah, S. N., Ismail, K. N. I. K., & Nachum, L. (2016). Does having women on boards create value? The impact of societal perceptions and corporate governance in emerging markets. *Strategic Management Journal*, *37*(3), 466-476.

Abdullah, S. N., Ismail, K., & Izah, K. N. (2017). Gender, ethnic and age diversity of the boards of large Malaysian firms and performance. *Jurnal Pengurusan*, *38*, 27-40.

Abidin, Z. Z., Kamal, N. M., & Jusoff, K. (2009). Board structure and corporate performance in Malaysia. *International Journal of Economics and Finance*, *1*(1), 150.

Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, *94*(2), 291-309.

Adams, R. B., & Funk, P. (2012). Beyond the glass ceiling: does gender matter? *Management Science*, *58*(2), 219-235.

Adams, R. B., de Haan, J., Terjesen, S., & van Ees, H. (2015). Board diversity: Moving the field forward. *Corporate Governance: An International Review*, *23*(2), 77-82.

Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of Economic Literature*, *48*(1), 58-107.

Admiral. (2004). *Annual Report*. Retrieved 2 June, 2015, from http://www.annualreports.co.uk/HostedData/AnnualReportArchive/a/LSE_ADM_2004.pdf

Adusei, M. (2011). Board structure and bank performance in Ghana. *Journal of Money, Investment and Banking*, *19*(1), 72-84.

Agrawal, A., & Chadha, S. (2005). Corporate governance and accounting scandals. *Journal of Law and Economics*, *48*(2), 371-406.

Agrawal, A., & Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, *31*(03), 377-397.

Agrawal, A., & Knoeber, C. R. (2001). Do some outside directors play a political role? *The Journal of Law and Economics*, *44*(1), 179-198.

Aguilera, R. V., Filatotchev, I., Gospel, H., & Jackson, G. (2008). An organisational approach to comparative corporate governance: Costs, contingencies, and complementarities. *Organisation Science*, *19*(3), 475-492.

Agyei-Mensah, B. K. (2016). Internal control information disclosure and corporate governance: evidence from an emerging market. *Corporate Governance: The International Journal of Business in Society*, *16*(1), 79-95.

Agyemang, O. S., & Castellini, M. (2015). Corporate governance in an emergent economy: a case of Ghana. *Corporate Governance*, *15*(1), 52-84.

Ahrens, T., & Chapman, C. S. (2006). Doing qualitative field research in management accounting: Positioning data to contribute to theory. *Accounting, Organisations and Society*, *31*(8), 819-841.

Akaike, H. (1974). A new look at the statistical model identification. *IEEE Transactions on Automatic Control*, *19*(6), 716-723.

Akbar, S., Poletti-Hughes, J., El-Faitouri, R., & Shah, S. Z. A. (2016). More on the relationship between corporate governance and firm performance in the UK: Evidence from the application of generalized method of moments estimation. *Research in International Business and Finance*, *38*, 417-429.

Akpan, E. O., & Amran, N. A. (2014). Board characteristics and company performance: Evidence from Nigeria. *Journal of Finance and Accounting*, *2*(3), 81-89.

Aldamen, H., Duncan, K., Kelly, S., McNamara, R., & Nagel, S. (2012). Audit committee characteristics and firm performance during the global financial crisis. *Accounting & Finance*, *52*(4), 971-1000.

Ali, M., Ng, Y. L., & Kulik, C. T. (2014). Board age and gender diversity: A test of competing linear and curvilinear predictions. *Journal of Business Ethics*, *125*(3), 497-512.

Allegrini, M., & Greco, G. (2013). Corporate boards, audit committees and voluntary disclosure: evidence from Italian Listed Companies. *Journal of Management & Governance*, *17*(1), 187-216.

Al-Malkawi, H. A. N., & Pillai, R. (2013). Corporate governance and firm performance: evidence from UAE. *Intensity: International Journal of Applied Social Science Research*, *2*(1), 42-52.

Anderson, R. C., Mansi, S. A., & Reeb, D. M. (2004). Board characteristics, accounting report integrity, and the cost of debt. *Journal of Accounting and Economics*, *37*(3), 315-342.

Anderson, R. C., Reeb, D. M., Upadhyay, A., & Zhao, W. (2011). The economics of director heterogeneity. *Financial Management*, *40*(1), 5-38.

Appiah, K. O., & Chizema, A. (2016). The impact of board quality and nomination committee on corporate bankruptcy. *Advances in Accounting*, *35*, 75-81.

Ararat, M., Aksu, M., & Tansel Cetin, A. (2015). How board diversity affects firm performance in emerging markets: Evidence on channels in controlled firms. *Corporate Governance: An International Review*, *23*(2), 83-103.

Armstrong, C., Guay, W. R., Mehran, H., & Weber, J. (2016). The role of information and financial reporting in corporate governance: A review of the evidence and the implications for banking firms and the financial services industry. *Economic Policy Review*, *1*, 107-128.

Arnold, G. (2013). *Essentials of Corporate Financial Management* (2nd ed.). Harlow: Pearson Education limited.

Arora, A., & Sharma, C. (2016). Corporate governance and firm performance in developing countries: evidence from India. *Corporate Governance*, *16*(2), 420-436.

Arthaud-Day, M. L., Certo, S. T., Dalton, C. M., & Dalton, D. R. (2006). A changing of the guard: Executive and director turnover following corporate financial restatements. *Academy of Management Journal*, *49*(6), 1119-1136.

Arthurs, J. D., & Busenitz, L. W. (2003). The boundaries and limitations of agency theory and stewardship theory in the venture capitalist/entrepreneur relationship. *Entrepreneurship Theory and Practice*, *28*(2), 145-162.

Asteriou, D., & Hall, S. G. (2016). *Applied Econometrics* (3rd ed.). London: Macmillan International Higher Education.

ASX. (2010). *ASX Corporate governance council corporate governance principles and recommendations.* Retrieved 10 December, 2014, from http://www.asx.com.au/documents/asx-compliance/cg_comparative_table_june_2010.pdf

Atrill, P. (2009). *Financial Management for Decision Makers* (5th ed.). Harlow: Pearson Education limited.

Audretsch, D. B., & Lehmann, E. E. (2005). The effects of experience, ownership, and knowledge on IPO survival: Empirical evidence from Germany. *Review of Accounting and Finance*, *4*(4), 13-33.

Azeez, A. A. (2015). Corporate governance and firm performance: evidence from Sri Lanka. *Journal of Finance*, *3*(1), 180-189.

Azhar, R. S., & Afandi, A. B. M. (2003). Performance of Islamic and mainstream banks in Malaysia. *International Journal of Social Economics*, *30*(12), 1249-1265.

Azlan Annuar, H. (2014). Independent non-executive directors strategic role–some evidence from Malaysia. *Corporate Governance*, *14*(3), 339-351.

Bailey, E. E., & Helfat, C. E. (2003). External management succession, human capital, and firm performance: An integrative analysis. *Managerial and Decision Economics*, *24*(4), 347-369.

Baker, M. J., & Foy, A. (2012). *Business and Management Research: How to Complete your Research Project Successfully* (3rd ed.). Helensburgh: Westburn Publishers.

Baltagi, B. (2008). *Econometric Analysis of Panel Data* (4th ed.). Chichester: John Wiley & Sons.

Band, D. (1992). Corporate governance: Why agency theory is not enough. *European Management Journal*, *10*(4), 453-459.

Bantel, K. A. (1993). Strategic clarity in banking: Role of top management-team demography. *Psychological Reports*, *73*(3), 1187-1201.

Barclays. (2010). *Annual Report*. Retrieved 12 June, 2015, from https://home.barclays/content/dam/home-barclays/documents/investor-relations/annualreports/ar2010/2010-barclays-plc-annual-report.pdf

Barker III, V. L., & Mueller, G. C. (2002). CEO characteristics and firm R&D spending. *Management Science, 48*(6), 782-801.

Barnhart, S. W., Marr, M. W., & Rosenstein, S. (1994). Firm performance and board composition: Some new evidence. *Managerial and Decision Economics*, *15*(4), 329-340.

Bartos, P. J. (2007). Is mining a high-tech industry?: Investigations into innovation and productivity advance. *Resources Policy*, *32*(4), 149-158.

Basmann, R. L. (1957). A generalized classical method of linear estimation of coefficients in a structural equation. *Econometrica: Journal of the Econometric Society*, *25*(1), 77-83.

Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics*, *97*(2), 207-221.

Bebchuk, L., Cohen, A., & Ferrell, A. (2009). What matters in corporate governance? *Review of Financial Studies*, *22*(2), 783-827.

Beck, T., Demirgüç-Kunt, A. S. L. I., & Maksimovic, V. (2005). Financial and legal constraints to growth: does firm size matter? *The Journal of Finance, 60*(1), 137-177.

Becker, G. (1964). *Human Capital*. New York: Columbia University Press.

Beckman, C. M. (2006). The influence of founding team company affiliations on firm behavior. *Academy of Management Journal*, *49*(4), 741-758.

Beiner, S., Drobetz, W., Schmid, M. M., & Zimmermann, H. (2006). An integrated framework of corporate governance and firm valuation. *European Financial Management*, *12*(2), 249-283.

Bekiroglu, C., Erdil, O., & Alpkan, L. 2011. Variable perceived by managers as antecedents to environmental management: An empirical study in the Turkish construction sector. *Journal of Global Strategic Management*, *9*, 157-175.

Bell, S. T., Villado, A. J., Lukasik, M. A., Belau, L., & Briggs, A. L. (2011). Getting specific about demographic diversity variable and team performance relationships: A meta-analysis. *Journal of Management*, *37*(3), 709-743.

Ben-Amar, W., & Zeghal, D. (2011). Board of directors' independence and executive compensation disclosure transparency: Canadian evidence. *Journal of Applied Accounting Research*, *12*(1), 43-60.

Ben-Amar, W., Francoeur, C., Hafsi, T., & Labelle, R. (2013). What makes better boards? A closer look at diversity and ownership. *British Journal of Management*, *24*(1), 85-101.

Bentler, P. M., & Mooijaart, A. B. (1989). Choice of structural model via parsimony: A rationale based on precision. *Psychological Bulletin*, *106*(2), 315.

Bhagat, S., & Black, B. S. (2002). The non-correlation between board independence and long-term firm performance. *Journal of Corporation Law*, *27*, 231-273.

Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. *Journal of Corporate Finance*, *14*(3), 257-273.

Bhagat, S., & Bolton, B. (2013). Director ownership, governance, and performance. *Journal of Financial and Quantitative Analysis*, *48*(1), 105-135.

Bhagat, S., Bolton, B., & Romano, R. (2008). The promise and peril of corporate governance indices. *Columbia Law Review*, 1803-1882.

Bhagat, S., Bolton, B., Subramanian, A. (2010). CEO education, CEO turnover, and firm performance Available at SSRN 1670219.

Bilimoria, D. (2006). The relationship between women corporate directors and women corporate officers. *Journal of Managerial Issues*, *18*(1), 47-61.

Bitektine, A., & Haack, P. (2015). The "macro" and the "micro" of legitimacy: Toward a multilevel theory of the legitimacy process. *Academy of Management Review*, *40*(1), 49-75.

Black, B. S., Cheffins, B. R., & Klausner, M. (2006a). Outside director liability: A policy analysis. *Journal of Institutional and Theoretical Economics JITE*, *162*(1), 5-20.

Black, B. S., De Carvalho, A. G., & Gorga, É. (2012). What matters and for which firms for corporate governance in emerging markets? Evidence from Brazil (and other BRIK countries). *Journal of Corporate Finance*, *18*(4), 934-952.

Black, B. S., Jang, H., & Kim, W. (2006b). Does corporate governance predict firms' market values? Evidence from Korea. *Journal of Law, Economics, and Organisation*, *22*(2), 366-413.

Black, B., De Carvalho, A. G., Khanna, V., Kim, W., & Yurtoglu, B. (2014). Methods for multicountry studies of corporate governance: Evidence from the BRIKT countries. *Journal of Econometrics*, *183*(2), 230-240.

Blaikie, N. (2010). *Designing Social Research: The Logic of Anticipation* (2nd ed.). Cambridge: Polity Press.

Blau, P. M. (1977). *Inequality and Heterogeneity: A Primitive Theory of Social Structure* (Vol. 7). New York: Free Press.

Blumberg, B. F., Cooper, D. R., & Schindler, P. S. (2014). *Business Research Methods* (4th ed.). Maidenhead: McGraw-Hill Education.

Board Agenda. (2018). *The Art & Science of Creating an Effective Board.* Retrieved 16 November, 2018, from https://boardagenda.com/resource/the-art-science-of-creating-an-effective-board/

Bodnaruk, A., Kandel, E., Massa, M., & Simonov, A. (2008). Shareholder diversification and the decision to go public. *Review of Financial Studies, 21*(6), 2779-2824.

Boehm, S. A., Kunze, F., & Bruch, H. (2014). Spotlight on age-diversity climate: The impact of age-inclusive HR practices on firm-level outcomes. *Personnel Psychology*, *67*(3), 667-704.

Boldina, I., & Beninger, P. G. (2016). Strengthening statistical usage in marine ecology: Linear regression. *Journal of Experimental Marine Biology and Ecology*, *474*, 81-91.

Bonazzi, L., & Islam, S. M. (2007). Agency theory and corporate governance: A study of the effectiveness of board in their monitoring of the CEO. *Journal of Modelling in Management*, *2*(1), 7-23.

Bonn, I., Yoshikawa, T., & Phan, P. H. (2004). Effects of board structure on firm performance: A comparison between Japan and Australia. *Asian Business & Management*, *3*(1), 105-125.

Boyd, B. (1990). Corporate linkages and organisational environment: A test of the resource dependence model. *Strategic Management Journal, 11*(6), 419-430.

Bozec, R., & Bozec, Y. (2012). The use of governance indexes in the governance-performance relationship literature: International evidence. *Canadian Journal of Administrative Sciences, 29*(1), 79-98.

Bozec, R., Dia, M., & Bozec, Y. (2010). Governance–performance relationship: a re-examination using technical efficiency measures. *British Journal of Management, 21*(3), 684-700.

BP. (2004). *Annual Report and Accounts*. Retrieved 09 June, 2015, from http://www.nioclibrary.ir/free-e-resources/BP%20Annual%20Report%20and%20Accounts/BP_ARA_2004_annual_report_and_accounts.pdf

Brammer, S., Millington, A., & Pavelin, S. (2007). Gender and ethnic diversity among UK corporate boards. *Corporate Governance: An International Review*, *15*(2), 393-403.

Brancato, C. K., & Patterson, D. J. (1999). *Board Diversity in US Corporations: Best Practices for Broadening the Profile of Corporate Boards*. Retrieved, 12 November, 2018, from www.conference-board.org/ publications/describe.cfm?id¼411

Branco, M. C., & Rodrigues, L. L. (2008). Factors influencing social responsibility disclosure by Portuguese companies. *Journal of Business Ethics*, *83*(4), 685-701.

Brauer, M. F., & Wiersema, M. F. (2012). Industry divestiture waves: How a firm's position influences investor returns. *Academy of Management Journal*, *55*(6), 1472-1492.

Brav, A., Lehavy, R., & Michaely, R. (2005). Using expectations to test asset pricing models. *Financial Management*, *34*(3), 31-64.

Brealey, R. A., Myers, S.C. & Allen, F. (2014). *Principles of Corporate Finance* (11th ed.). New York: McGraw-Hill/Irwin.

Bredo, E. (2009). Comments on Howe: Getting over the methodology wars. *Educational Researcher*, *38*(6), 441-448.

Brennan, N., & McDermott, M. (2004). Alternative perspectives on independence of directors. *Corporate Governance: An International Review*, *12*(3), 325-336.

Brick, I. E., & Chidambaran, N. K. (2010). Board meetings, committee structure, and firm value. *Journal of Corporate Finance*, *16*(4), 533-553.

Broadbridge, A., Hearn, J., Huse, M., & Grethe Solberg, A. (2006). Gender-related boardroom dynamics: How Scandinavian women make and can make contributions on corporate boards. *Women in Management Review*, *21*(2), 113-130.

Brown, L. D., & Caylor, M. L. (2006). Corporate governance and firm valuation. *Journal of Accounting and Public Policy*, *25*(4), 409-434.

Brown, R. (2000). Social identity theory: Past achievements, current problems and future challenges. *European Journal of Social Psychology*, *30*(6), 745-778.

Bryman, A. (2016). *Social Research Methods* (5th ed.). Oxford: Oxford University Press.

Bryman, A., & Bell, E. (2015). *Business Research Methods* (4th ed.). Oxford: Oxford University Press.

Buckley, A. (2011). *Financial Crisis: Causes, Context and Consequences.* Harlow: Pearson Education limited.

Burkert, M., & Lueg, R. (2013). Differences in the sophistication of Value-based Management–The role of top executives. *Management Accounting Research*, *24*(1), 3-22.

Cadbury Committee. (1992). Report of the committee on "*The Financial Aspects of Corporate Governance*". Retrieved 02 July, 2016, from http://www.ecgi.org/codes/documents/cadbury.pdf

Cai, Y., Sevilir, M., Wesep, V., Dickersin, E., & Wang, S. (2010, February). Managerial ownership and employee risk bearing. In *AFA 2011 Denver Meetings Paper*.

Cameron, K. S., Whetten, D. A., & Kim, M. U. (1987). Organisational dysfunctions of decline. *Academy of Management Journal*, *30*(1), 126-138.

Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics*, *83*(3), 435-451.

Cannella, A. A., & Pettigrew, A. (2001). Upper echelons: Donald Hambrick on executives and strategy. *The Academy of Management Executive*, *15*(3), 36-42.

Cannella, A. A., Park, J. H., & Lee, H. U. (2008). Top management team functional background diversity and firm performance: Examining the roles of team member colocation and environmental uncertainty. *Academy of Management Journal*, *51*(4), 768-784.

Capelle-Blancard, G., & Petit, A. (2017). The weighting of CSR dimensions: One size does not fit all. *Business & Society*, *56*(6), 919-943.

Carey, S. (2011). *A Beginner's Guide to Scientific Method* (4th ed.). Boston: Cengage Learning.

Carpenter, M. A., & Fredrickson, J. W. (2001). Top management teams, global strategic posture, and the moderating role of uncertainty. *Academy of Management Journal*, *44*(3), 533-545.

Carpenter, M. A., & Westphal, J. D. (2001). The strategic context of external network ties: Examining the impact of director appointments on board involvement in strategic decision-making. *Academy of Management Journal*, *44*(4), 639-660.

Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. *Journal of Management*, *30*(6), 749-778.

Carter, C. B., & Lorsch, J. (2013). *Back to the drawing board: Designing corporate boards for a complex world*. Boston: Harvard Business Press.

Carter, D. A., D'Souza, F., Simkins, B. J., & Simpson, W. G. (2010). The gender and ethnic diversity of US boards and board committees and firm financial performance. *Corporate Governance: An International Review*, *18*(5), 396-414.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, *38*(1), 33-53.

Carter, S. M., & Little, M. (2007). Justifying knowledge, justifying method, taking action: Epistemologies, methodologies, and methods in qualitative research. *Qualitative Health Research*, *17*(10), 1316-1328.

Carvalhal, A., & Nobili, C. (2011). Does corporate governance matter for stock returns? Estimating a four-factor asset pricing model including a governance index. *Quantitative Finance*, *11*(2), 247-259.

Castineira, B. R., & Nunes, L. C. (1999). Testing endogeneity in a regression model: An application of instrumental variable estimation. *Investigacion Operativa*, *8*, 197-206.

Catalyst. (2004). *The Bottom Line: Connecting Corporate Performance and Gender Diversity*. New York: Catalyst Publication Code D58

Catalyst. (2015). Quick Take: *Women on Boards*. Retrieved 15 November, 2017, http://www.catalyst.org/knowledge/women-boards

Certo, S. T. (2003). Influencing initial public offering investors with prestige: Signaling with board structures. *Academy of management Review*, *28*(3), 432-446.

Certo, S. T., Covin, J. G., Daily, C. M., & Dalton, D. R. (2001). Wealth and the effects of founder management among IPO-stage new ventures. *Strategic Management Journal*, *22*(6/7), 641.

Chahal, H., & Kumari, A. (2013). Examining talent management using CG as proxy measure: a case study of State Bank of India. *Corporate Governance: The International Journal of Business in Society*, *13*(2), 198-207.

Chakravarthy, B. S. (1986). Measuring strategic performance. *Strategic Management Journal*, *7*(5), 437-458.

Chan, M. C., Watson, J., & Woodliff, D. (2014). Corporate governance quality and CSR disclosures. *Journal of Business Ethics*, *125*(1), 59-73.

Chapple, L., & Humphrey, J. E. (2014). Does board gender diversity have a financial impact? Evidence using stock portfolio performance. *Journal of Business Ethics*, *122*(4), 709-723.

Cheffins, B. R. (2013). The history of corporate governance. In M. Wright et al. (Ed.), *The Oxford Handbook of Corporate Governance* (pp. 46-64). Oxford: Oxford University Press.

Chen, A., Kao, L., Tsao, M., & Wu, C. (2007). Building a corporate governance index from the perspectives of ownership and leadership for firms in Taiwan. *Corporate Governance: An International Review*, *15*(2), 251-261.

Chen, H. L., Hsu, W. T., & Chang, C. Y. (2016). Independent directors' human and social capital, firm internationalization and performance implications: An integrated agency-resource dependence view. *International Business Review*, *25*(4), 859-871.

Chen, K. C., Chen, Z., & Wei, K. J. (2009). Legal protection of investors, corporate governance, and the cost of equity capital. *Journal of Corporate Finance*, *15*(3), 273-289.

Cheng, E. C., & Courtenay, S. M. (2006). Board composition, regulatory regime and voluntary disclosure. *The International Journal of Accounting*, *41*(3), 262-289.

Cheng, S. (2008). Board size and the variability of corporate performance. *Journal of Financial Economics*, *87*(1), 157-176.

Chenhall, R. H., & Moers, F. (2007). The issue of endogeneity within theory-based, quantitative management accounting research. *European Accounting Review*, *16*(1), 173-196.

Cheung, Y. L., Connelly, J. T., Jiang, P., & Limpaphayom, P. (2011). Does corporate governance predict future performance? Evidence from Hong Kong. *Financial Management*, *40*(1), 159-197.

Child, J. (1974). Managerial and organisational factors associated with company performance part I. *Journal of Management Studies*, *11*(3), 175-189.

Chung, K. H., & Pruitt, S. W. (1994). A simple approximation of Tobin's Q. *Financial Management*, *23*(3), 70-74.

Clark, A. M. (1998). The qualitative-quantitative debate: moving from positivism and confrontation to post-positivism and reconciliation. *Journal of Advanced Nursing*, *27*(6), 1242-1249.

Clarke, C. (2009). Paths between positivism and interpretivism: an appraisal of Hay's via media. *Politics*, *29*(1), 28-36.

Clarke, T. (Ed.). (2004). *Theories of Corporate Governance: The Philosophical Foundations of Corporate Governance*. Abingdon: Routledge.

Clemente, A. G., & Labat, B. N. (2009). Corporate governance mechanisms and voluntary disclosure. The role of independent directors in the board of listed Spanish firms. *International Journal of Accounting Information Systems*, *5*, 5-24.

Clements, C., Neill, J. D., & Wertheim, P. (2015). Multiple directorships, industry relatedness, and corporate governance effectiveness. *Corporate Governance*, *15*(5), 590-606.

Coad, A., Segarra, A., & Teruel, M. (2013). Like milk or wine: Does firm performance improve with age? *Structural Change and Economic Dynamics*, *24*(Supplement C), 173-189.

Coles, J. L., Daniel, N. D., & Naveen, L. (2008). Boards: Does one size fit all? *Journal of Financial Economics*, *87*(2), 329-356.

Collins, C. J., & Clark, K. D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organisational competitive advantage. *Academy of Management Journal*, *46*(6), 740-751.

Combined Code (1998). *The Combined Code on Corporate Governance.* London: Gee Publishing Ltd.

Combined Code (2003). *The Combined Code on Corporate Governance.* London: Financial Reporting Council.

Combs, J., Liu, Y., Hall, A., & Ketchen, D. (2006). How much do high-performance work practices matter? A meta-analysis of their effects on organisational performance. *Personnel Psychology*, *59*(3), 501-528.

Committee on the Financial Aspects of Corporate Governance (1992) *Report with Code of Best Practice* [Cadbury Report]. London: Gee Publishing.

Companies Act (2006). *Chapter 46*. Retrieved, 15 November, 2016, from https://www.legislation.gov.uk/ukpga/2006/46/pdfs/ukpga_20060046_en.pdf

Cong, Y., & Freedman, M. (2011). Corporate governance and environmental performance and disclosures. *Advances in Accounting*, *27*(2), 223-232.

Conger, J. A., Lawler, E., & Finegold, D. (2002). Corporate boards: New strategies for adding value at the top. *Personnel Psychology, 55*(1), 195-257.

Connelly, J. T., Limpaphayom, P., & Nagarajan, N. J. (2012). Form versus substance: The effect of ownership structure and corporate governance on firm value in Thailand. *Journal of Banking & Finance, 36*(6), 1722-1743.

Conyon, M. J., & He, L. (2017). Firm performance and boardroom gender diversity: A quantile regression approach. *Journal of Business Research, 79*, 198-211.

Conyon, M., & Sadler, G. (2010). Shareholder voting and directors' remuneration report legislation: Say on pay in the UK. *Corporate Governance: An International Review*, *18*(4), 296-312.

Cooper, D. R., & Schindler, P. S. (2008). *Business Research Methods* (10th ed.). New York: McGraw-Hill Higher Education.

Cooper, H., & Dent, A. (2011). Ethical issues in the conduct and reporting of meta-analysis. *Handbook of Ethics in Quantitative Psychology*, 417-443.

Core, J. E., Guay, W. R., & Rusticus, T. O. (2006). Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations. *The Journal of Finance*, *61*(2), 655-687.

Crocker, A., & Eckardt, R. (2014). A multilevel investigation of individual-and unit-level human capital complementarities. *Journal of Management, 40*(2), 509-530.

Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen Jr, D. J. (2011). Does human capital matter? A meta-analysis of the relationship between human capital and firm performance. *Journal of Applied Psychology, 96*(3), 443.

Crotty, M. (1998). *The Foundations of Social Research: Meaning and Perspective in the Research Process*. London: Sage Publications Ltd.

Crow, P., Lockhart, J., & Lewis, K. (2013). *The relationship between governance and performance: Literature review reveals new insights.* Paper presented at the ECMLG 2013-Proceedings for the 9th European Conference on Management Leadership and Governance: ECMLG 2013. Retrieved 10 March, 2016, from http://www.petercrow.com/uploads/8/6/4/1/8641405/91955925.pdf

Crowther, D., & Lancaster, G. (2009). *Research Methods: A Concise Introduction to Research in Management and Business Consultancy* (2nd ed.). London: Butterworth-Heinemann.

Custódio, C., & Metzger, D. (2013). How do CEOs matter? The effect of industry expertise on acquisition returns. *The Review of Financial Studies*, *26*(8), 2008-2047.

Cyert, R. M., J. G. March. (1963). *A Behavioral Theory of the Firm* (2nd ed.) New Jersey: Prentice Hall.

Da Silva, A. L. C., & Leal, R. P. C. (2005). Corporate governance index, firm valuation and performance in Brazil. *Brazilian Review of Finance*, *3*(1), 1-18.

Dahya, J., Dimitrov, O., & McConnell, J. J. (2008). Dominant shareholders, corporate boards, and corporate value: A cross-country analysis. *Journal of Financial Economics*, *87*(1), 73-100.

Daily, C. M., & Johnson, J. L. (1997). Sources of CEO power and firm financial performance: A longitudinal assessment. *Journal of Management, 23*(2), 97-117.

Daily, C. M., & Schwenk, C. (1996). Chief executive officers, top management teams, and boards of directors: congruent or countervailing forces? *Journal of Management, 22*(2), 185-208.

Daily, C. M., Dalton, D. R., & Cannella Jr, A. A. (2003). Corporate governance: Decades of dialogue and data. *Academy of Management Review*, *28*(3), 371-382.

Daily, C. M., Johnson, J. L., Ellstrand, A. E., & Dalton, D. R. (1998). Compensation committee composition as a determinant of CEO compensation. *Academy of Management Journal*, *41*(2), 209-220.

Daily, C. M., McDougall, P. P., Covin, J. G., & Dalton, D. R. (2002). Governance and strategic leadership in entrepreneurial firms. *Journal of Management, 28*(3), 387-412.

Dallas, L. L. (2001). The new managerialism and diversity on corporate boards of directors. *Tulane Law Review*, *76*, 1363-1401.

Dalton, D. R., Hitt, M. A., Certo, S. T., & Dalton, C. M. (2007). The fundamental agency problem and its mitigation: Independence, equity, and the market for corporate control. *The Academy of Management Annals*, *1*(1), 1-64.

Darmadi, S. (2011). Board diversity and firm performance: the Indonesian evidence. *Corporate Ownership and Control*, *8*(2), 450-466.

Darmadi, S. (2013). Corporate governance disclosure in the annual report: An exploratory study on Indonesian Islamic banks. *Humanomics, 29*(1), 4-23.

Dart, R. (2004). The legitimacy of social enterprise. *Nonprofit Management and Leadership*, *14*(4), 411-424.

D'Aveni, R. A. (1990). Top managerial prestige and organisational bankruptcy. *Organisation Science, 1*(2), 121-142.

David Brown, J., Earle, J. S., & Telegdy, Á. (2010). Employment and Wage Effects of Privatisation: Evidence from Hungary, Romania, Russia and Ukraine. *The Economic Journal, 120*(545), 683-708.

Davis, G. F., & Cobb, J. A. (2010). Resource dependence theory: Past and future. *Research in the Sociology of Organisations, 28*(1), 21-42.

De Andres, P., & Vallelado, E. (2008). Corporate governance in banking: The role of the board of directors. *Journal of Banking & Finance, 32*(12), 2570-2580.

De Cabo, R. M., Gimeno, R., & Nieto, M. J. (2012). Gender diversity on European banks' boards of directors. *Journal of Business Ethics, 109*(2), 145-162.

De Lange, A. H., Taris, T. W., Jansen, P., Kompier, M. A., Houtman, I. L., & Bongers, P. M. (2010). On the relationships among work characteristics and learning-related behavior: Does age matter? *Journal of Organisational Behavior, 31*(7), 925-950.

De Souza, S. V., & Junqueira, R. G. (2005). A procedure to assess linearity by ordinary least squares method. *Analytica Chimica Acta*, *552*(1-2), 25-35.

De Wet, J. H. J. H. V. H., & Du Toit, E. (2007). Return on equity: A popular, but flawed measure of corporate financial performance. *South African Journal of Business Management*, *38*(1), 1-11.

Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures–a theoretical foundation. *Accounting, Auditing & Accountability Journal*, *15*(3), 282-311.

Deephouse, D. L. (1996). Does isomorphism legitimate? *Academy of Management Journal*, *39*(4), 1024-1039.

DeFond, M. L., Hann, R. N., & Hu, X. (2005). Does the market value financial expertise on audit committees of boards of directors? *Journal of Accounting Research, 43*(2), 153-193.

Dell'Atti, A., Intonti, M., & Iannuzzi, A. P. (2013). The effectiveness of remuneration committees in European banks: Regulation and best practices. *Journal of Financial Regulation and Compliance*, *21*(4), 373-396.

Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance, 7*(3), 209-233.

Dess, G. G., & Beard, D. W. (1984). Dimensions of organisational task environments. *Administrative Science Quarterly*, 52-73.

Dewing, I. P., & Russell, P. O. (2004). Regulation of UK Corporate Governance: lessons from accounting, audit and financial services. *Corporate Governance: An International Review*, *12*(1), 107-115.

Dezsö, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, *33*(9), 1072-1089.

Dhir, A. A. (2015). *Challenging Boardroom Homogeneity: Corporate Law, Governance, and Diversity*. Cambridge: Cambridge University Press.

Di Pietra, R., Grambovas, C. A., Raonic, I., & Riccaboni, A. (2008). The effects of board size and 'busy'directors on the market value of Italian companies. *Journal of Management & Governance*, *12*(1), 73-91.

Diavatopoulos, D., & Fodor, A. (2016). Does Corporate Governance Matter for Equity Returns? *Journal of Accounting and Finance*, *16*(5), 39.

Díaz-Fernández, M. C., González-Rodríguez, M. R., & Simonetti, B. (2015). Top management team's intellectual capital and firm performance. *European Management Journal*, *33*(5), 322-331.

DiMaggio, P., & Powell, W. W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organisational fields. *American Sociological Review*, *48*(2), 147-160.

Ding, S., Jia, C., Wilson, C., & Wu, Z. (2015). Political connections and agency conflicts: the roles of owner and manager political influence on executive compensation. *Review of Quantitative Finance and Accounting*, *45*(2), 407-434.

Dobbin, F., & Jung, J. (2011). Board diversity and corporate performance: Filling in the gaps: Corporate board gender diversity and stock performance: The competence gap or institutional investor bias. *North Carolina Law Review*, *89*, 809.

Donaldson, L. (1990). The ethereal hand: Organisational economics and management theory. *Academy of Management Review*, *15*(3), 369-381.

Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management*, *16*(1), 49-64.

Donnelly, R., & Mulcahy, M. (2008). Board structure, ownership, and voluntary disclosure in Ireland. *Corporate Governance: An International Review*, *16*(5), 416-429.

Dowell, G. W., Shackell, M. B., & Stuart, N. V. (2011). Boards, CEOs, and surviving a financial crisis: Evidence from the internet shakeout. *Strategic Management Journal*, *32*(10), 1025-1045.

Doyle, J. T., Ge, W., & McVay, S. (2007). Accruals quality and internal control over financial reporting. *The Accounting Review*, *82*(5), 1141-1170.

Drago, C., Millo, F., Ricciuti, R., & Santella, P. (2015). Corporate governance reforms, interlocking directorship and company performance in Italy. *International Review of Law and Economics*, *41*, 38-49.

Dragomir, V. D. (2010). Environmentally sensitive disclosures and financial performance in a European setting. *Journal of Accounting & Organisational Change*, *6*(3), 359-388.

Dulewicz, V., & Herbert, P. (2004). Does the composition and practice of boards of directors bear any relationship to the performance of their companies? *Corporate Governance: An International Review*, *12*(3), 263-280.

Durnev, A., & Kim, E. (2005). To steal or not to steal: Firm attributes, legal environment, and valuation. *The Journal of Finance*, *60*(3), 1461-1493.

Dvorak, P. (2008, January 14). Some things don't change: Sarbanes-Oxley was expected to increase the number of minority directors. What happened? *Wall Street Journal*. Retrieved, 01 November, 2018, from https://www.wsj.com/articles/SB119998932208381439?mod=searchresults&page=1&pos=1

Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2012). *Management Research* (4th ed.). London: Sage Publications Ltd.

El-Sayed Ebaid, I. (2009). The impact of capital-structure choice on firm performance: empirical evidence from Egypt. *The Journal of Risk Finance*, *10*(5), 477-487.

Epps, R. W., & Cereola, S. J. (2008). Do institutional shareholder services (ISS) corporate governance ratings reflect a company's operating performance? *Critical Perspectives on Accounting*, *19*(8), 1135-1148.

Equality and Human Rights Commission. (2011). *Equality and Diversity: Good Practice for the Construction Sector*. Retrieved 05 October, 2018, from https://www.equalityhumanrights.com/sites/default/files/ed_report_construction_sector.pdf

Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance: An International Review*, *11*(2), 102-111.

Erkens, D. H., Hung, M., & Matos, P. (2012). Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide. *Journal of Corporate Finance*, *18*(2), 389-411.

Eulaiwi, B., Al-Hadi, A., Taylor, G., Al-Yahyaee, K. H., & Evans, J. (2016). Multiple directorships, family ownership and the board nomination committee: International evidence from the GCC. *Emerging Markets Review*, *28*, 61-88.

Eulerich, M., Velte, P., & Van Uum, C. (2014). The impact of management board diversity on corporate performance-an empirical analysis for the German two-tier system. *Problems and Perspectives in Management*, *12*(1), 25–39.

European Commission (2012a). *Women in Economic Decision-Making in the EU: Progress Report.* Retrieved 23 August, 2016, from http://ec.europa.eu/justice/gender-equality/files/women-on-boards_en.pdf

European Commission. (2012b). *Women on Boards – Factsheet 1; The Economic Arguments.* Retrieved, 01 November, 2018, from http://ec.europa.eu/justice/gender-equality/files/womenonboards/factsheet-gen eral-1_en.pdf

Fabel, O. (2004). Spinoffs of entrepreneurial firms: An o-ring approach. *Journal of Institutional and Theoretical Economics JITE*, *160*(3), 416-438.

Faccio, M., Marchica, M. T., & Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance*, *39*, 193-209.

Fahlenbrach, R., Low, A., & Stulz, R. M. (2010). Why do firms appoint CEOs as outside directors? *Journal of Financial Economics*, *97*(1), 12-32.

Falato, A., Kadyrzhanova, D., & Lel, U. (2014). Distracted directors: Does board busyness hurt shareholder value? *Journal of Financial Economics*, *113*(3), 404-426.

Faleye, O. (2007). Classified boards, firm value, and managerial entrenchment. *Journal of Financial Economics*, *83*(2), 501-529.

Fallatah, Y., & Dickins, D. (2012). Corporate governance and firm performance and value in Saudi Arabia. *African Journal of Business Management*, *6*(36), 10025-10034.

Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, *88*(2), 288-307.

Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, *47*(2), 427-465.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, 301-325.

Farber, D. B. (2005). Restoring trust after fraud: Does corporate governance matter? *The Accounting Review*, *80*(2), 539-561.

Farjoun, M., & Levin, M. (2011). A fractal approach to industry dynamism. *Organisation Studies*, *32*(6), 825-851.

Farrell, K. A., & Hersch, P. L. (2005). Additions to corporate boards: the effect of gender. *Journal of Corporate Finance*, *11*(1-2), 85-106.

Fassin, Y. (2012). Stakeholder management, reciprocity and stakeholder responsibility. *Journal of Business Ethics*, *109*(1), 83-96.

Fauzi, F., & Locke, S. (2012). Do agency costs really matter? A non-linear approach of panel data. *Asian Journal of Finance & Accounting*, *4*(1), 359-376.

Ferreira, D. (2015). Board diversity: Should we trust research to inform policy? *Corporate Governance: An International Review*, *23*(2), 108-111.

Ferreira, D., Ferreira, M. A., & Raposo, C. C. (2011). Board structure and price informativeness. *Journal of Financial Economics*, *99*(3), 523-545.

Ferrero-Ferrero, I., Fernández-Izquierdo, M. Á., & Muñoz-Torres, M. J. (2015). Age Diversity: An Empirical Study in the Board of Directors. *Cybernetics and Systems*, *46*(3-4), 249-270.

Ferrero-Ferrero, I., Fernández-Izquierdo, M. Á., & Muñoz-Torres, M. J. (2012). The impact of the board of directors characteristics on corporate performance and risk-taking before and during the global financial crisis. *Review of Managerial Science*, *6*(3), 207-226.

Ferris, S. P., & Jagannathan, M. (2001). The incidence and determinants of multiple corporate directorships. *Applied Economics Letters*, *8*(1), 31-35.

Ferris, S. P., Jagannathan, M., & Pritchard, A. C. (2003). Too busy to mind the business? Monitoring by directors with multiple board appointments. *Journal of Finance*, 1087-1111.

Fich, E. M. (2005). Are some outside directors better than others? Evidence from director appointments by Fortune 1000 firms. *The Journal of Business*, *78*(5), 1943-1972.

Fich, E. M., & Shivdasani, A. (2006). Are busy boards effective monitors? *The Journal of Finance*, *61*(2), 689-724.

Fiedler, F. (1967). *A Theory of Leadership Effectiveness*. New York: McGraw-Hill.

Field, L., Lowry, M., & Mkrtchyan, A. (2013). Are busy boards detrimental? *Journal of Financial Economics*, *109*(1), 63-82.

Filatotchev, I., & Allcock, D. (2010). Corporate governance and executive remuneration: A contingency framework. *Academy of Management Perspectives*, *24*(1), 20-33.

Financial Reporting Council (2012). T*he UK Corporate Governance Code*. Retrieved 10 December, 2014, from https://www.frc.org.uk/corporate/ukcgcode.cfm

Financial Reporting Council (2014). T*he UK Corporate Governance Code*. Retrieved 01 April, 2015, from https://www.frc.org.uk/Our-Work/Publications/Corporate-Governance/UK-Corporate-Governance-Code-2014.pdf

Financial Reporting Council (2016). T*he UK Corporate Governance Code*. Retrieved 01 July, 2016, from https://www.frc.org.uk/getattachment/ca7e94c4-b9a9-49e2-a824-ad76a322873c/UK-Corporate-Governance-Code-April-2016.pdf

Financial Reporting Council (2018). T*he UK Corporate Governance Code*. Retrieved 16 September, 2018, from https://www.frc.org.uk/getattachment/88bd8c45-50ea-4841-95b0-d2f4f48069a2/2018-UK-Corporate-Governance-Code-FINAL.PDF

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (2009). *Strategic leadership: Theory and Research on Executives, Top Management Teams, and Boards*. New York: Oxford University Press.

Firth, M., Malatesta, P. H., Xin, Q., & Xu, L. (2012). Corporate investment, government control, and financing channels: Evidence from China's listed companies. *Journal of Corporate Finance*, *18*(3), 433-450.

Fitzmaurice, G. M., Laird, N. M., & Ware, J. H. (2012). *Applied Longitudinal Analysis* (2nd ed.). Chichester: John Wiley & Sons.

Flora, D. (2018). *Statistical Methods for the Social & Behavioural Sciences: A Model-Based Approach*. London: Sage Publications Ltd.

Fondas, N., & Sassalos, S. (2000). A different voice in the boardroom: How the presence of women directors affects board influence over management. *Global Focus, 12*(2), 13-22.

Forbes, D. P., & Milliken, F. J. (1999). Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. *Academy of Management Review, 24*(3), 489-505.

Ford, C. (2010). Principles-based securities regulation in the wake of the global financial crisis. *McGill Law Journal/Revue de droit de McGill, 55*(2), 257-307.

Fox, M. A., & Hamilton, R. T. (1994). Ownership and diversification: Agency theory or stewardship theory. *Journal of Management Studies, 31*(1), 69-81.

Francis, B., Hasan, I., & Wu, Q. (2015). Professors in the boardroom and their impact on corporate governance and firm performance. *Financial Management, 44*(3), 547-581.

Francoeur, C., Labelle, R., & Sinclair-Desgagné, B. (2008). Gender diversity in corporate governance and top management. *Journal of Business Ethics, 81*(1), 83-95.

Freeman, R. E. (1984). *Stakeholder Management: Framework and Philosophy*. Marshfield: Pitman.

Frezatti, F. (2007). The "economic paradigm" in management accounting: Return on equity and the use of various management accounting artifacts in a Brazilian context. *Managerial Auditing Journal, 22*(5), 514-532.

Frosch, K. H. (2011). Workforce age and innovation: a literature survey. *International Journal of Management Reviews, 13*(4), 414-430.

Frynas, J. G. (2010). Corporate social responsibility and societal governance: Lessons from transparency in the oil and gas sector. *Journal of Business Ethics, 93*(2), 163-179.

Frynas, J. G., & Stephens, S. (2015). Political corporate social responsibility: Reviewing theories and setting new agendas. *International Journal of Management Reviews, 17*(4), 483-509.

FTSE Group. (2016). *FTSE Factsheet*. Retrieved 25 February, 2016, from www.ftse.com/Analytics/FactSheets

Gales, L. M., & Kesner, I. F. (1994). An analysis of board of director size and composition in bankrupt organisations. *Journal of Business Research, 30*(3), 271-282.

Garanina, T., & Kaikova, E. (2016). Corporate governance mechanisms and agency costs: cross-country analysis. *Corporate Governance, 16*(2), 347-360.

Garay, U., & González, M. (2008). Corporate governance and firm value: The case of Venezuela. *Corporate Governance: An International Review, 16*(3), 194-209.

García-Meca, E., Garcia-Sanchez, I. M., & Martínez-Ferrero, J. (2015). Board diversity and its effects on bank performance: An international analysis. *Journal of Banking & Finance, 53*, 202-214.

Geletkanycz, M. A., & Boyd, B. K. (2011). CEO outside directorships and firm performance: A reconciliation of agency and embeddedness views. *Academy of Management Journal, 54*(2), 335-352.

Geletkanycz, M. A., & Hambrick, D. C. (1997). The external ties of top executives: Implications for strategic choice and performance. *Administrative Science Quarterly*, 654-681.

Gerhart, B., & Rynes, S. (2003). *Compensation: Theory, Evidence, and Strategic Implications*. Thousand Oaks: Sage Publications.

Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: a guide for non-statisticians. *International Journal of Endocrinology and Metabolism, 10*(2), 486-489.

Gill, A., & Mathur, N. (2011). Board size, CEO duality, and the value of Canadian manufacturing firms. *Journal of Applied Finance and Banking, 1*(3), 1-13.

Gill, J., & Johnson, P. (2010). *Research Methods for Managers* (4th ed.). London: Sage Publications.

Gilpatrick, K. (2000). Increase diversity by recruiting 'young'exuberance into the 'seasoned'board mix. *Credit Union Management, 3*(9), 28-29.

Goergen, M. (2012). *International Corporate Governance* (1st ed.). Harlow: Pearson Higher Ed.

Golden, B. R., & Zajac, E. J. (2001). When will boards influence strategy? Inclination× power= strategic change. *Strategic Management Journal*, *22*(12), 1087-1111.

Goldkuhl, G. (2012). Pragmatism vs interpretivism in qualitative information systems research. *European Journal of Information Systems, 21*(2), 135-146.

Gompers, P., J. Ishii, and A. Metrick. 2003. Corporate governance and equity prices. *Quarterly Journal of Economics, 118*, 107–55.

Goodstein, J., Gautam, K., & Boeker, W. (1994). The effects of board size and diversity on strategic change. *Strategic Management Journal*, *15*(3), 241-250.

Gray, R., & Milne, M. J. (2015). It's not what you do, it's the way that you do it? Of method and madness. *Critical Perspectives on Accounting, 32*, 51-66.

Gray, S., & Nowland, J. (2013). Is prior director experience valuable? *Accounting & Finance, 53*(3), 643-666.

Gray, S., & Nowland, J. (2017). Director workloads, attendance and firm performance. *Accounting Research Journal, 31*(2), 214-231.

Greckhamer, T., Misangyi, V. F., Elms, H., & Lacey, R. (2007). Using qualitative comparative analysis in strategic management research: An examination of combinations of industry, corporate, and business-unit effects. *Organisational Research Methods*, *20*(10), 1-32.

Green, C. P., & Homroy, S. (2018). Female directors, board committees and firm performance. *European Economic Review*, *102*, 19-38.

Greenbury Report (1995). *Directors' Remuneration.* London: Gee Publishing Ltd.

Gregory-Smith, I., Main, B. G., & O'Reilly III, C. A. (2014). Appointments, pay and performance in UK boardrooms by gender. *The Economic Journal*, *124*(574), 109-128.

Grosvold, J., Brammer, S., & Rayton, B. (2007). Board diversity in the United Kingdom and Norway: an exploratory analysis. *Business Ethics: A European Review*, *16*(4), 344-357.

Grove, H., Patelli, L., Victoravich, L. M., & Xu, P. (2011). Corporate governance and performance in the wake of the financial crisis: Evidence from US commercial banks. *Corporate Governance: An International Review*, *19*(5), 418-436.

Grund, C., & Westergård-Nielsen, N. (2008). Age structure of the workforce and firm performance. *International Journal of Manpower*, *29*(5), 410-422.

Guest, P. M. (2009). The impact of board size on firm performance: evidence from the UK. *The European Journal of Finance*, *15*(4), 385-404.

Guillet, B. D., & Mattila, A. S. (2010). A descriptive examination of corporate governance in the hospitality industry. *International Journal of Hospitality Management*, *29*(4), 677-684.

Gujarati, D. N., & Porter, D. C. (2009). *Essentials of Econometrics* (4th ed.). New York: McGraw-Hill.

Gul, F. A., Srinidhi, B., & Ng, A. C. (2011). Does board gender diversity improve the informativeness of stock prices? *Journal of Accounting and Economics*, *51*(3), 314-338.

Güner, A. B., Malmendier, U., & Tate, G. (2008). Financial expertise of directors. *Journal of Financial Economics*, *88*(2), 323-354.

Guo, L., & Masulis, R. W. (2015). Board structure and monitoring: New evidence from CEO turnovers. *The Review of Financial Studies*, *28*(10), 2770-2811.

Guo, Z., & Kga, U. K. (2012). Corporate governance and firm performance of listed firms in Sri Lanka. *Procedia-Social and Behavioral Sciences*, *40*, 664-667.

Haas, H., & Nüesch, S. (2012). Are multinational teams more successful? *The International Journal of Human Resource Management*, *23*(15), 3105-3113.

Haddad, K., Rahman, A., & Kuczera, G. (2011). Comparison of ordinary and generalised least squares regression models in regional flood frequency analysis: a

case study for New South Wales. *Australasian Journal of Water Resources*, *15*(1), 59-70.

Hagendorff, J., & Keasey, K. (2012). The value of board diversity in banking: evidence from the market for corporate control. *The European Journal of Finance*, *18*(1), 41-58.

Hahn, P. D., & Lasfer, M. (2011). The compensation of non-executive directors: rationale, form, and findings. *Journal of Management & Governance*, *15*(4), 589-601.

Hall, R. H. (1977). *Organisations, Structure and Process* (2nd ed.). New Jersey: Prentice Hall.

Hambrick, D. C. (2005). Upper echelons theory: Origins, twists and turns, and lessons learned. *Great Minds in Management: The Process of Theory Development*, 109-127.

Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of Management Review*, *32*(2), 334-343.

Hambrick, D. C., & Finkelstein, S. (1995). The effects of ownership structure on conditions at the top: The case of CEO pay raises. *Strategic Management Journal*, *16*(3), 175-193.

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organisation as a reflection of its top managers. *Academy of Management Review*, *9*(2), 193-206.

Hambrick, D. C., Misangyi, V. F., & Park, C. A. (2015). The quad model for identifying a corporate director's potential for effective monitoring: Toward a new theory of board sufficiency. *Academy of Management Review*, *40*(3), 323-344.

Hambrick, D. C., Werder, A., & Zajac, E. J. (2008). New directions in corporate governance research. *Organisation Science, 19*(3), 381–385

Haniffa, R., & Hudaib, M. (2006). Corporate governance structure and performance of Malaysian listed companies. *Journal of Business Finance & Accounting*, *33*(7-8), 1034-1062.

Hannan, M. T., & Freeman, J. (1977). The population ecology of organisations. *American Journal of Sociology*, *82*(5), 929-964.

Hansen, B. E., & Seo, B. (2002). Testing for two-regime threshold cointegration in vector error-correction models. *Journal of Econometrics, 110*(2), 293-318.

Harford, J., Mansi, S. A., & Maxwell, W. F. (2012). Corporate governance and firm cash holdings in the US. In *Corporate Governance* (pp. 107-138). Berlin: Springer Publishing.

Harris, I. C., & Shimizu, K. (2004). Too busy to serve? An examination of the influence of overboarded directors. *Journal of Management Studies, 41*(5), 775-798.

Harrison, D. A., & Klein, K. J. (2007). What's the difference? Diversity constructs as separation, variety, or disparity in organisations. *Academy of Management Review, 32*(4), 1199-1228.

Haslam, S. A., Ryan, M. K., Kulich, C., Trojanowski, G., & Atkins, C. (2010). Investing with prejudice: The relationship between women's presence on company boards and objective and subjective measures of company performance. *British Journal of Management, 21*(2), 484-497.

Haynes, K. T., & Hillman, A. (2010). The effect of board capital and CEO power on strategic change. *Strategic Management Journal, 31*(11), 1145-1163.

Haynes, K. T., Campbell, J. T., & Hitt, M. A. (2014). When more is not enough executive greed and its influence on shareholder wealth. *Journal of Management*, 0149206314535444.

Healy, M., & Perry, C. (2000). Comprehensive criteria to judge validity and reliability of qualitative research within the realism paradigm. *Qualitative Market Research: An International Journal, 3*(3), 118-126.

Hejazi, R., Ghanbari, M., & Alipour, M. (2016). Intellectual, human and structural capital effects on firm performance as measured by Tobin's Q. *Knowledge and Process Management, 23*(4), 259-273.

Henderson, A. D., Miller, D., & Hambrick, D. C. (2006). How quickly do CEOs become obsolete? Industry dynamism, CEO tenure, and company performance. *Strategic Management Journal, 27*(5), 447-460.

Hendry, J. (2001). Missing the target: Normative stakeholder theory and the corporate governance debate. *Business Ethics Quarterly*, 159-176.

Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review, 88*(1), 96-118.

Hertel, G., Van der Heijden, B.I.J.M., De Lange, A., & Deller, J. (2013). Facilitating age diversity in organisations–part I: challenging popular misbeliefs. *Journal of Managerial Psychology, 28*(7/8), 729-740.

Hiebl, M. R. W. (2013). Upper echelons theory in management accounting and control research. *Journal of Management Control, 24*(3), 223-240.

Higgs, D. (2003). *Review of the Role and Effectiveness of Non-Executive Directors.* London: Department of Trade and Industry.

Hillman, A. J. (2005). Politicians on the board of directors: Do connections affect the bottom line? *Journal of Management, 31*(3), 464-481.

Hillman, A. J. (2015). Board diversity: beginning to unpeel the onion. *Corporate Governance: An International Review, 23*(2), 104-107.

Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review, 28*(3), 383-396.

Hillman, A. J., Cannella, A. A., & Paetzold, R. L. (2000). The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. *Journal of Management Studies, 37*(2), 235-256.

Hillman, A. J., Keim, G. D., & Luce, R. A. (2001). Board composition and stakeholder performance: Do stakeholder directors make a difference? *Business & Society, 40*(3), 295-314.

Hillman, A. J., Shropshire, C., & Cannella, A. A. (2007). Organisational predictors of women on corporate boards. *Academy of Management Journal, 50*(4), 941-952.

Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource dependence theory: A review. *Journal of Management, 35*(6), 1404-1427.

Hirschman, A. O. (1964). The paternity of an index. *American Economic Review, 54*, 761–762.

Hitt, M. A., Bierman, L., Uhlenbruck, K., & Shimizu, K. (2006). The importance of resources in the internationalization of professional service firms: The good, the bad, and the ugly. *Academy of Management Journal, 49*(6), 1137-1157.

Hitt, M. A., Biermant, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management Journal, 44*(1), 13-28.

Hoitash, U. (2011). Should independent board members with social ties to management disqualify themselves from serving on the board? *Journal of Business Ethics, 99*(3), 399-423.

Holmes, M. J., & Maghrebi, N. (2015). Reconsidering the role of Tobin's Q: Nonlinearities and the adjustment of investment expenditure. *Studies in Economics and Finance, 32*(2), 222-234.

Hooghiemstra, R., & Van Manen, J. (2004). The Independence Paradox:(im) possibilities facing non-executive directors in The Netherlands. *Corporate Governance: An International Review, 12*(3), 314-324.

Hoque, M. Z., Islam, M. R., & Azam, M. N. (2013). Board committee meetings and firm financial performance: An Investigation of Australian Companies. *International Review of Finance, 13*(4), 503-528.

Houle, C. O. (1990). Who should be on your board. *Nonprofit World, 8*(1), 33-35.

Hox, J. J., & Boeije, H. R. (2005). Data collection, primary vs. secondary. *Encyclopedia of Social Measurement, 1*, 593-599.

Huang, J., & Kisgen, D. J. (2013). Gender and corporate finance: Are male executives overconfident relative to female executives? *Journal of Financial Economics, 108*(3), 822-839.

Huse, M. (2007). *Boards, Governance and Value Creation: The Human Side of Corporate Governance*. Cambridge: Cambridge University Press.

Huse, M., & Grethe Solberg, A. (2006). Gender-related boardroom dynamics: How Scandinavian women make and can make contributions on corporate boards. *Women in Management Review*, *21*(2), 113-130.

Huse, M., Hoskisson, R., Zattoni, A., & Viganò, R. (2011). New perspectives on board research: Changing the research agenda. *Journal of Management & Governance*, *15*(1), 5-28.

International Institute for Environment and Development (IIED). (2002). *Facing the Future: The Reporting of the Mining Minerals and Sustainable Development Australia Project*. Report prepared by Sheehy B. & P. Dickie, Australian Minerals and Energy Environment Foundation, http://www.qmc.com.au/ files/pdf/environment/facing future.pdf

Isidro, H., & Sobral, M. (2015). The effects of women on corporate boards on firm value, financial performance, and ethical and social compliance. *Journal of Business Ethics*, *132*(1), 1-19.

ISS, (2016) *ISS Governance Quickscore.* Retrieved 23 August, 2016, from https://www.issgovernance.com/solutions/iss-analytics/quickscore/

Ittner, C. D., & Larcker, D. F. (2001). Assessing empirical research in managerial accounting: a value-based management perspective. *Journal of Accounting and Economics*, *32*(1-3), 349-410.

Jackling, B., & Johl, S. (2009). Board structure and firm performance: Evidence from India's top companies. *Corporate Governance: An International Review*, *17*(4), 492-509.

Jackson, S. E., Joshi, A., & Erhardt, N. L. (2003). Recent research on team and organisational diversity: SWOT analysis and implications. *Journal of Management*, *29*(6), 801-830.

Jalbert, T., Rao, R. P., & Jalbert, M. (2002). Does school matter? An empirical analysis of CEO education, compensation, and firm performance. *International Business and Economics Research Journal*, *1*(1), 83-98.

Jehn, K. A., Northcraft, G. B., & Neale, M. A. (1999). Why differences make a difference: A field study of diversity, conflict and performance in workgroups. *Administrative Science Quarterly*, *44*(4), 741-763.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Jensen, M., & Zajac, E. J. (2004). Corporate elites and corporate strategy: How demographic preferences and structural position shape the scope of the firm. *Strategic Management Journal, 25*(6), 507-524.

Jermias, J., & Gani, L. (2014). The impact of board capital and board characteristics on firm performance. *The British Accounting Review*, *46*(2), 135-153.

Jhunjhunwala, S., & Mishra, R. K. (2012). Board diversity and corporate performance: The Indian evidence. *IUP Journal of Corporate Governance*, *11*(3), 71.

Jiraporn, P., Davidson III, W. N., DaDalt, P., & Ning, Y. (2009). Too busy to show up? An analysis of directors' absences. *The Quarterly Review of Economics and Finance*, *49*(3), 1159-1171.

Jiraporn, P., Kim, Y. S., & Davidson, W. N. (2008). Multiple directorships and corporate diversification. *Journal of Empirical Finance*, *15*(3), 418-435.

Jiraporn, P., Singh, M., & Lee, C. I. (2009). Ineffective corporate governance: Director busyness and board committee memberships. *Journal of Banking & Finance*, *33*(5), 819-828.

Jizi, M. I., Salama, A., Dixon, R., & Stratling, R. (2014). Corporate governance and corporate social responsibility disclosure: Evidence from the US banking sector. *Journal of Business Ethics*, *125*(4), 601-615.

Jo, H., & Lee, J. (1996). The relationship between an entrepreneur's background and performance in a new venture. *Technovation*, *16*(4), 161-211.

Joecks, J., Pull, K., & Vetter, K. (2013). Gender diversity in the boardroom and firm performance: What exactly constitutes a "critical mass?" *Journal of Business Ethics, 118*(1), 61-72.

Johnson, J. E., & Powell, P. L. (1994). Decision making, risk and gender: Are managers different? *British Journal of Management, 5*(2), 123-138.

Johnson, J. L., Daily, C. M., & Ellstrand, A. E. (1996). Boards of directors: A review and research agenda. *Journal of Management, 22*(3), 409-438.

Johnson, N. B., & Droege, S. (2004). Reflections on the generalization of agency theory: Cross-cultural considerations. *Human Resource Management Review*, *14*(3), 325-335.

Johnson, R. A., Hoskisson, R. E., & Hitt, M. A. (1993). Board of director involvement in restructuring: The effects of board versus managerial controls and characteristics. *Strategic Management Journal, 14*(S1), 33-50.

Johnson, S. G., Schnatterly, K., & Hill, A. D. (2013). Board composition beyond independence: Social capital, human capital, and demographics. *Journal of Management, 39*(1), 232-262.

Jones, I., & Pollitt, M. (2004). Understanding how issues in corporate governance develop: Cadbury Report to Higgs Review. *Corporate Governance: An International Review, 12*(2), 162-171.

Kaczmarek, S., & Nyuur, R. (2016). Review of the literature on board committees: taking stock and looking ahead. *International Journal of Business Governance and Ethics, 11*(2), 89-115.

Kaczmarek, S., Kimino, S., & Pye, A. (2012). Board task-related faultlines and firm performance: A decade of evidence. *Corporate Governance: An International Review, 20*(4), 337-351.

Kagzi, M., & Guha, M. (2018). Board demographic diversity: a review of literature. *Journal of Strategy and Management, 11*(1), 33-51.

Kagzi, M., & Guha, M. (2018). Does board demographic diversity influence firm performance? Evidence from Indian-knowledge intensive firms. *Benchmarking: An International Journal, 25*(3), 1028-1058.

Kakabadse, N. K., Figueira, C., Nicolopoulou, K., Hong Yang, J., Kakabadse, A. P., & Özbilgin, M. F. (2015). Gender diversity and board performance: Women's experiences and perspectives. *Human Resource Management, 54*(2), 265-281.

Kamardin, H. (2014). Managerial ownership and firm performance: The influence of family directors and non-family directors. In *Ethics, Governance and Corporate Crime: Challenges and Consequences* (pp. 47-83). Emerald Group Publishing Limited.

Kamardin, H., & Haron, H. (2011). Board performance and firm performance of Malaysian listed companies. *International Journal of Economics and Accounting, 2*(3), 282-306.

Kang, H., Cheng, M., & Gray, S. J. (2007). Corporate governance and board composition: diversity and independence of Australian boards. *Corporate Governance: An International Review, 15*(2), 194-207.

Kanter, R. (1977). *Men and Women of the Organisation*. New York: Basic Books.

Karake, Z. A. (1995). Information technology performance: Agency and upper echelon theories. *Management Decision, 33*(9), 30-37.

Karamanou, I., & Vafeas, N. (2005). The association between corporate boards, audit committees, and management earnings forecasts: An empirical analysis. *Journal of Accounting Research, 43*(3), 453-486.

Kelton, A. S., & Yang, Y. W. (2008). The impact of corporate governance on Internet financial reporting. *Journal of accounting and Public Policy, 27*(1), 62-87.

Ketokivi, M., & Mantere, S. (2010). Two strategies for inductive reasoning in organisational research. *Academy of Management Review, 35*(2), 315-333.

Khan, A., Kaleem, A., & Nazir, M. S. (2012). Impact of financial leverage on agency cost of free cash flow: Evidence from the manufacturing sector of Pakistan. *Journal of Basic and Applied Scientific Research*, *2*(7), 6694-6700.

Khan, A., Muttakin, M. B., & Siddiqui, J. (2013). Corporate governance and corporate social responsibility disclosures: Evidence from an emerging economy. *Journal of Business Ethics*, *114*(2), 207-223.

Khanna, P., Jones, C. D., & Boivie, S., (2014). Director human capital, information processing demands, and board effectiveness. *Journal of Management, 40,* 557-585

Kiel, G. C., & Nicholson, G. J. (2003). Board composition and corporate performance: How the Australian experience informs contrasting theories of corporate governance. *Corporate Governance: An International Review*, *11*(3), 189-205.

Kiel, G. C., & Nicholson, G. J. (2006). Multiple directorships and corporate performance in Australian listed companies. *Corporate Governance: An International Review*, *14*(6), 530-546.

Kilduff, M., Angelmar, R., & Mehra, A. (2000). Top management-team diversity and firm performance: Examining the role of cognitions. *Organisation Science, 11*(1), 21-34.

Kim, B., Burns, M. L., & Prescott, J. E. (2009). The strategic role of the board: The impact of board structure on top management team strategic action capability. *Corporate Governance: An International Review*, *17*(6), 728-743.

Kim, H., & Lim, C. (2010). Diversity, outside directors and firm valuation: Korean evidence. *Journal of Business Research*, *63*(3), 284-291.

Klapper, L. F. and Love, I. (2004). Corporate governance, investor protection, and performance in emerging markets. *Journal of Corporate Finance*, *10*, 703–728.

Klein, P., Shapiro, D., & Young, J. (2005). Corporate governance, family ownership and firm value: the Canadian evidence. *Corporate Governance: An International Review*, *13*(6), 769-784.

Konrad, A. M., Kramer, V., & Erkut, S. (2008). Critical mass: the impact of three or more women on corporate boards. *Organisational Dynamics*, *37*(2), 145-164.

Kor, Y. Y. (2003). Experience-based top management team competence and sustained growth. *Organisation Science*, *14*(6), 707-719.

Kor, Y. Y., & Sundaramurthy, C. (2008). Experience-based human capital and social capital of outside directors. *Journal of Management, 35,* 981-1006.

Korent, D., Đunđek, I., & Čalopa, M. K. (2014). Corporate governance practices and firm performance measured by Croatian Corporate Governance Index (CCGI®). *Economic Research*, *27*(1), 221-231.

Krause, R., Semadeni, M., & Cannella Jr, A. A. (2014). CEO duality: A review and research agenda. *Journal of Management*, *40*(1), 256-286.

Kreitz, P. A. (2008). Best practices for managing organisational diversity. *The Journal of Academic Librarianship*, *34*(2), 101-120.

Krishnan, J. (2005). Audit committee quality and internal control: An empirical analysis. *The Accounting Review*, *80*(2), 649-675.

Krishnan, J., Wen, Y., & Zhao, W. (2011). Legal expertise on corporate audit committees and financial reporting quality. *The Accounting Review, 86*(6), 2099-2130.

Kroll, M., Walters, B. A., & Wright, P. (2008). Board vigilance, director experience, and corporate outcomes. *Strategic Management Journal, 29*(4), 363-382.

Kuhç, M., & Kuzey, C. (2016). The effect of board gender diversity on firm performance: evidence from Turkey. *Gender in Management: An International Journal, 31*(7), 434-455.

Kumar, R. (2011). *Research Methodology: A Step-by-Step Guide for Beginners* (3rd ed.). London: Sage.

Kunze, F., Boehm, S., & Bruch, H. (2013). Age, resistance to change, and job performance. *Journal of Managerial Psychology, 28*(7-8), 741-760.

Lagoarde-Segot, T. (2015). Diversifying finance research: From financialization to sustainability. *International Review of Financial Analysis, 39*, 1-6.

Lai, J. H., Chen, L. Y., & Chang, S. C. (2012). The board mechanism and entry mode choice. *Journal of International Management*, *18*(4), 379-392.

Lang, L. H. P., & Stulz, R. M. (1994). Tobin's Q, corporate diversification, and firm performance. *Journal of Political Economy, 102*(6), 1248.

Laoworapong, M., Supattarakul, S., & Swierczek, F. W. (2015). Corporate governance, board effectiveness, and performance of Thai listed firms. *AU Journal of Management, 13*(1), 25-40.

Larcker, D. F., & Rusticus, T. O. (2010). On the use of instrumental variables in accounting research. *Journal of Accounting and Economics*, *49*(3), 186-205.

Larcker, D. F., So, E. C., & Wang, C. C. (2013). Boardroom centrality and firm performance. *Journal of Accounting and Economics*, *55*(2), 225-250.

Lau, D. C., & Murnighan, J. K. (1998). Demographic diversity and faultlines: The compositional dynamics of organisational groups. *Academy of Management Review*, *23*(2), 325-340.

Lavelle, P. (2002) Clarification on financial reporting and corporate governance disclosures. *Accountancy Ireland, 42*(2), 88-88.

Lawrence, B. S. (1997). Perspective—The black box of organizational demography. *Organization Science*, *8*(1), 1-22.

Lawson, A. E. (2005). What is the role of induction and deduction in reasoning and scientific inquiry? *Journal of Research in Science Teaching*, *42*(6), 716.

Le, S. A., Kroll, M. J., & Walters, B. A. (2013). Outside directors' experience, TMT firm-specific human capital, and firm performance in entrepreneurial IPO firms. *Journal of Business Research*, *66*(4), 533-539.

Lee, A. S., & Hubona, G. S. (2009). A scientific basis for rigor in information systems research. *MIS Quarterly*, *33*(2), 237-262.

Lee, D. Y., & Tsang, E. W. (2001). The effects of entrepreneurial personality, background and network activities on venture growth. *Journal of Management Studies*, *38*(4), 583-602.

Lee, P. M., & James, E. H. (2007). She'-e-os: gender effects and investor reactions to the announcements of top executive appointments. *Strategic Management Journal*, *28*(3), 227-241.

Lei, A. C., & Deng, J. (2014). Do multiple directorships increase firm value? Evidence from independent directors in Hong Kong. *Journal of International Financial Management & Accounting*, *25*(2), 121-181.

Lester, R. H., Certo, S. T., Dalton, C. M., Dalton, D. R., & Cannella, A. A. (2006). Initial public offering investor valuations: An examination of top management team prestige and environmental uncertainty. *Journal of Small Business Management*, *44*(1), 1-26.

Letting, D., Nicholas, K., Aosa, E., & Machuki, V. (2012). Board diversity and performance of companies listed in Nairobi Stock Exchange. *International Journal of Humanities and Social Science*, *2*(11), 172-182.

Li, J., & Ang, J. S. (2000). Quantity versus quality of directors' time: The effectiveness of directors and number of outside directorships. *Managerial Finance*, *26*(10), 1-21.

Li, J., & Hambrick, D. C. (2005). Factional groups: A new vantage on demographic faultlines, conflict, and disintegration in work teams. *Academy of Management Journal*, *48*(5), 794-813.

Li, J., Chu, C. W. L., Lam, K. C., & Liao, S. (2011). Age diversity and firm performance in an emerging economy: Implications for cross-cultural human resource management. *Human Resource Management*, *50*(2), 247-270.

Li, K., & Zhao, X. (2008). Asymmetric information and dividend policy. *Financial Management*, *37*(4), 673-694.

Liao, L., Luo, L., & Tang, Q. (2015). Gender diversity, board independence, environmental committee and greenhouse gas disclosure. *The British Accounting Review*, *47*(4), 409-424.

Lim, S., Matolcsy, Z., & Chow, D. (2007). The association between board composition and different types of voluntary disclosure. *European Accounting Review*, *16*(3), 555-583.

Lin, Y.-f., Yeh, Y. M. C., & Yang, F.-m. (2014). Supervisory quality of board and firm performance: a perspective of board meeting attendance. *Total Quality Management & Business Excellence*, *25*(3-4), 264-279.

Liu, C., & Paul, D. L. (2015). A new perspective on director busyness. *Journal of Financial Research*, *38*(2), 193-218.

Liu, H., Wang, H., & Wu, L. (2016). Removing vacant chairs: Does independent directors' attendance at board meetings matter? *Journal of Business Ethics*, *133*(2), 375-393.

Liu, Y., Miletkov, M. K., Wei, Z., & Yang, T. (2015). Board independence and firm performance in China. *Journal of Corporate Finance*, *30*, 223-244.

Liu, Y., Wei, Z., & Xie, F. (2014). Do women directors improve firm performance in China? *Journal of Corporate Finance*, *28*, 169-184.

Loderer, C., & Peyer, U. (2002). Board overlap, seat accumulation and share prices. *European Financial Management*, *8*(2), 165-192.

Lopes, I. T., Ferraz, D. P., & Martins, M. M. (2016). The influence of diversity on boards on profitability: an overview across Iberian listed companies. *Corporate Ownership and Control*, (2-Continued 2), 454-460.

López Iturriaga, F. J., & Morrós Rodríguez, I. (2014). Boards of directors and firm performance: the effect of multiple directorships. *Spanish Journal of Finance and Accounting*, *43*(2), 177-192.

Lord Davies Review. (2011). *Women on Boards*. Retrieved 28 August, 2018, from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31480/11-745-women-on-boards.pdf

Low, D. C. M., Roberts, H., & Whiting, R. H. (2015). Board gender diversity and firm performance: Empirical evidence from Hong Kong, South Korea, Malaysia and Singapore. *Pacific-Basin Finance Journal*, *35*, 381-401.

Lückerath-Rovers, M. (2013). Women on boards and firm performance. *Journal of Management & Governance*, *17*(2), 491-509.

Ma, J., & Khanna, T. (2016). Independent directors' dissent on boards: Evidence from listed companies in China. *Strategic Management Journal*, *37*(8), 1547-1557.

Maddala, G. S., & Lahiri, K. (2009). *Introduction to Econometrics* (4th ed.). Chichester: John Wiley & Sons.

Magrane, J., & Malthus, S. (2010). Audit committee effectiveness: a public sector case study. *Managerial Auditing Journal*, *25*(5), 427-443.

Mahadeo, J. D., Soobaroyen, T., & Hanuman, V. O. (2012). Board composition and financial performance: Uncovering the effects of diversity in an emerging economy. *Journal of Business Ethics*, *105*(3), 375-388.

Maier, S. (2005). *How global is good corporate governance.* London: Ethical Investment Research Services.

Malik, M. S., & Makhdoom, D. D. (2016). Does corporate governance beget firm performance in Fortune Global 500 companies? *Corporate Governance*, *16*(4), 747-764.

Mallin, C. (2013). *Corporate Governance* (4th ed.). Oxford: Oxford University Press.

Mallin, C. (2016). *Corporate Governance* (5th ed.). Oxford: Oxford University Press.

Mallin, C. A. (2011). *Handbook on International Corporate Governance: Country Analyses*. Cheltenham: Edward Elgar Publishing.

Mallin, C., & Ow-Yong, K. (2012). Factors influencing corporate governance disclosures: Evidence from alternative investment market (AIM) companies in the UK. *The European Journal of Finance*, *18*(6), 515-533.

Mallin, C., Melis, A., & Gaia, S. (2015). The remuneration of independent directors in the UK and Italy: An empirical analysis based on agency theory. *International Business Review*, *24*(2), 175-186.

Marinova, J., Plantenga, J., & Remery, C. (2016). Gender diversity and firm performance: evidence from Dutch and Danish boardrooms. *The International Journal of Human Resource Management*, *27*(15), 1777-1790.

Marks and Spencer. (2010). *Annual Report and Financial Statements*. Retrieved 12 June, 2015, from https://corporate.marksandspencer.com/documents/reports-results-and-publications/annual-reports/annual-report-2010.pdf

Martin, G., Gözübüyük, R., & Becerra, M. (2015). Interlocks and firm performance: The role of uncertainty in the directorate interlock-performance relationship. *Strategic Management Journal*, *36*(2), 235-253.

Masulis, R. W., & Mobbs, S. (2011). Are all inside directors the same? Evidence from the external directorship market. *The Journal of Finance*, *66*(3), 823-872.

Masulis, R. W., Wang, C., & Xie, F. (2012). Globalizing the boardroom—The effects of foreign directors on corporate governance and firm performance. *Journal of Accounting and Economics*, *53*(3), 527-554.

McCormick-Hyland, M., & Marcellino, P. A. (2002). Examining gender on corporate boards: A regional study. *Corporate Governance: The International Journal of Business in Society*, *2*(4), 24-31.

McDonald, M. L., Westphal, J. D., & Graebner, M. E. (2008). What do they know? The effects of outside director acquisition experience on firm acquisition performance. *Strategic Management Journal*, *29*(11), 1155-1177.

McKnight, P. J., & Weir, C. (2009). Agency costs, corporate governance mechanisms and ownership structure in large UK publicly quoted companies: A panel data analysis. *The Quarterly Review of Economics and Finance*, *49*(2), 139-158.

Melis, A., Gaia, S., & Carta, S. (2015). Directors' remuneration: A comparison of Italian and UK non-financial listed firms' disclosure. *The British Accounting Review*, *47*(1), 66-84.

Méndez, C. F., Pathan, S., & García, R. A. (2015). Monitoring capabilities of busy and overlap directors: Evidence from Australia. *Pacific-Basin Finance Journal*, *35*, 444-469.

Mercer, M. (2004). How do investors assess the credibility of management disclosures? *Accounting Horizons*, *18*(3), 185-196.

Mihret, D. G. (2014). How can we explain internal auditing? The inadequacy of agency theory and a labor process alternative. *Critical Perspectives on Accounting*, *25*(8), 771-782.

Mikes, A., & Kaplan, R. S. (2015). When one size doesn't fit all: Evolving directions in the research and practice of enterprise risk management. *Journal of Applied Corporate Finance*, *27*(1), 37-40.

Miller, T., & del Carmen Triana, M. (2009). Demographic diversity in the boardroom: Mediators of the board diversity–firm performance relationship. *Journal of Management Studies*, *46*(5), 755-786.

Min, B. S., & Verhoeven, P. (2013). Outsider board activity, ownership structure and firm value: evidence from Korea. *International Review of Finance*, *13*(2), 187-214.

Mishra, S., & Mohanty, P. (2014). Corporate governance as a value driver for firm performance: evidence from India. *Corporate Governance*, *14*(2), 265-280.

Mizruchi, M. S. (1996). What do interlocks do? An analysis, critique, and assessment of research on interlocking directorates. *Annual Review of Sociology*, *22*(1), 271-298.

Mohammad, W. M. W., Wasiuzzaman, S., & Salleh, N. M. Z. N. (2016). Board and audit committee effectiveness, ethnic diversification and earnings management: a study of the Malaysian manufacturing sector. *Corporate Governance: The International Journal of Business in Society*, *16*(4), 726-746.

Monteiro, A. (2006). A quick guide to financial ratios. *The Citizen, Moneyweb Business Insert*, *6*(3).

Morgan, G. (Ed.). (1983). *Beyond Method: Strategies for Social Research*. Beverly Hills: Sage Publications.

Mouselli, S., Abdulraouf, R., & Jaafar, A. (2014). Corporate governance, accruals quality and stock returns: evidence from the UK. *Corporate Governance*, *14*(1), 32-44.

Mudambi, R., & Treichel, M. Z. (2005). Cash crisis in newly public internet-based firms: an empirical analysis. *Journal of Business Venturing*, *20*(4), 543-571.

Murray, A. I. (1989). Top management group heterogeneity and firm performance. *Strategic Management Journal*, *10*(1), 125-141.

Musteen, M., Datta, D. K., & Kemmerer, B. (2010). Corporate reputation: do board characteristics matter? *British Journal of Management*, *21*(2), 498-510.

Nahar-Abdullah, S. (2004). Board composition, CEO duality and performance among Malaysian listed companies. *Corporate Governance: The International Journal of Business in Society*, *4*(4), 47-61.

Nandi, S., & Ghosh, S. (2013). Corporate governance attributes, firm characteristics and the level of corporate disclosure: Evidence from the Indian listed firms. *Decision Science Letters*, *2*(1), 45-58.

Naranjo-Gil, D. (2009). Management information systems and strategic performances: The role of top team composition. *International Journal of Information Management*, *29*(2), 104-110.

Naranjo-Gil, D., & Hartmann, F. (2007). Management accounting systems, top management team heterogeneity and strategic change. *Accounting, Organisations and Society*, *32*(7), 735-756.

Naranjo-Gil, D., Maas, V. S., & Hartmann, F. G. (2009). How CFOs determine management accounting innovation: an examination of direct and indirect effects. *European Accounting Review*, *18*(4), 667-695.

National Association of Corporate Directors. (2005). *Report of the NACD Blue Ribbon Commission on Director Professionalism*. Retrieved 15 September, 2018, from http:// www.nacdonline.org

Neate, R. (2012, May 22). One in 10 executive boardroom appointments go to women. *The Guardian.* Retrieved 01 July, 2015, from http://www.theguardian.com/world/2012/may/22/executive-boardroom-appointments-women-deloitte

Neuman, W. L. (2006). *Social Research Methods: Qualitative and Quantitative Approaches* (6th ed.). Boston: Allyn and Bacon.

Nguyen, D. D., Hagendorff, J., & Eshraghi, A. (2015). Which executive characteristics create value in banking? Evidence from appointment announcements. *Corporate Governance: An International Review*, *23*(2), 112-128.

Nicholson, G. J., & Kiel, G. C. (2004). A framework for diagnosing board effectiveness. *Corporate Governance: An International Review*, *12*(4), 442-460.

Nicholson, G. J., & Kiel, G. C. (2007). Can directors impact performance? A case-based test of three theories of corporate governance. *Corporate Governance: An International Review*, *15*(4), 585-608.

Nielsen, B. B., & Nielsen, S. (2013). Top management team nationality diversity and firm performance: A multilevel study. *Strategic Management Journal, 34*(3), 373-382.

Nielsen, S. (2010). Top management team diversity: A review of theories and methodologies. *International Journal of Management Reviews, 12*(3), 301-316.

Norburn, D. (1989). The chief executive: A breed apart. *Strategic Management Journal, 10*(1), 1-15.

Northumbria University (2019). *Research Ethics and Governance Handbook.* Retrieved 9 April, 2019, from https://northumbria-cdn.azureedge.net/-/media/corporate-website/new-sitecore-gallery/research/documents/pdf/northumbria-research-ethics--governance-handbook.pdf?modified=20190305153453&la=en&hash=0A38BE82CF2E4AD8A2AF51A1448EA6DAA99C75FF

Ntim, C. G. (2015). Board diversity and organisational valuation: unravelling the effects of ethnicity and gender. *Journal of Management & Governance, 19*(1), 167-195.

Ntim, C. G., Lindop, S., Osei, K. A., & Thomas, D. A. (2015). Executive Compensation, Corporate Governance and Corporate Performance: A Simultaneous Equation Approach. *Managerial and Decision Economics, 36*(2), 67-96.

Ntim, C. G., Opong, K. K., & Danbolt, J. (2012). The relative value relevance of shareholder versus stakeholder corporate governance disclosure policy reforms in South Africa. *Corporate Governance: An International Review, 20*(1), 84-105.

O'Connor, T., & Byrne, J. (2015). Governance and the corporate life-cycle. *International Journal of Managerial Finance, 11*(1), 23-43.

O'Leary, Z. (2010) *The Essential Guide to Doing Your Research Project* (2nd ed.). Los Angeles: Sage Publications Ltd.

Oakley, J. G. (2000). Gender-based barriers to senior management positions: Understanding the scarcity of female CEOs. *Journal of Business Ethics, 27*(4), 321-334.

Oakshott, L. (2009). *Essential Quantitative Methods for Business, Management and Finance* (4th ed.). Basingstoke: Palgrave Macmillan.

Oba, V. C., & Fodio, M. I. (2013). Boards' gender mix as a predictor of financial performance in Nigeria: an empirical study. *International Journal of Economics and Finance, 5*(2), 170.

OECD. (1999). Principles of Corporate Governance. Retrieved 17 December, 2014, from https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=C/MIN(99)6&docLanguage=En

OECD. (2015) *Principles of Corporate Governance*. Retrieved 05 September, 2016, from https://www.oecd.org/daf/ca/Corporate-Governance-Principles-ENG.pdf

Omer, T. C., Shelley, M. K., & Tice, F. M. (2014). Do well-connected directors affect firm value? *Journal of Applied Finance, Forthcoming*.

Ooi, C. A., Hooy, C. W., & Som, A. P. M. (2015). Diversity in human and social capital: Empirical evidence from Asian tourism firms in corporate board composition. *Tourism Management*, *48*, 139-153.

Østergaard, C. R., Timmermans, B., & Kristinsson, K. (2011). Does a different view create something new? The effect of employee diversity on innovation. *Research Policy*, *40*(3), 500-509.

Padgett, C. (2012). *Corporate Governance: Theory and Practice*. New York: Palgrave Macmillan.

Pathan, S., & Faff, R. (2013). Does board structure in banks really affect their performance? *Journal of Banking & Finance*, *37*(5), 1573-1589.

Pavlatos, O. (2012). The impact of CFOs' characteristics and information technology on cost management systems. *Journal of Applied Accounting Research*, *13*(3), 242-254.

Payne, G. T., Benson, G. S., & Finegold, D. L. (2009). Corporate board attributes, team effectiveness and financial performance. *Journal of Management Studies*, *46*(4), 704-731.

Pechlaner, H., & Sauerwein, E. (2002). Strategy implementation in the Alpine tourism industry. *International Journal of Contemporary Hospitality Management*, *14*(4), 157-168.

Pelled, L. H., Eisenhardt, K. M., & Xin, K. R. (1999). Exploring the black box: An analysis of work group diversity, conflict and performance. *Administrative Science Quarterly*, *44*(1), 1-28.

Peng, M. W. (2004). Outside directors and firm performance during institutional transitions. *Strategic Management Journal*, *25*(5), 453-471.

Peng, M. W., Zhang, S., & Li, X. (2007). CEO duality and firm performance during China's institutional transitions. *Management and Organisation Review*, *3*(2), 205-225.

Perry, T., & Peyer, U. (2005). Board seat accumulation by executives: A shareholder's perspective. *The Journal of Finance*, *60*(4), 2083-2123.

Perryman, A. A., Fernando, G. D., & Tripathy, A. (2016). Do gender differences persist? An examination of gender diversity on firm performance, risk, and executive compensation. *Journal of Business Research*, *69*(2), 579-586.

Peterson, R. S., Smith, D. B., Martorana, P. V., & Owens, P. D. (2003). The impact of chief executive officer personality on top management team dynamics: one mechanism by which leadership affects organisational performance. *Journal of Applied Psychology*, *88*(5), 795-808.

Petrovic, J. (2008). Unlocking the role of a board director: a review of the literature. *Management Decision*, *46*(9), 1373-1392.

Pfeffer, J., & Salancik, G. R. (1978). *The External Control of Organisations: A Resource Dependence Perspective*. New York: Harper & Row.

Pillai, R., & Al-Malkawi, H. A. N. (2018). On the relationship between corporate governance and firm performance: Evidence from GCC countries. *Research in International Business and Finance*, *44*, 394-410.

Pitt-Catsouphes, M., Mirvis, P., & Berzin, S. (2013). Leveraging age diversity for innovation. *Journal of Intergenerational Relationships*, *11*(3), 238-254.

Polonsky, M. J., Neville, B. A., Bell, S. J., & Mengüç, B. (2005). Corporate reputation, stakeholders and the social performance-financial performance relationship. *European Journal of Marketing*, *39*(9/10), 1184-1198.

Popper, K. (2002). *The Logic of Scientific Discovery*. New York: Routledge.

Post, C., & Byron, K. (2015). Women on boards and firm financial performance: A meta-analysis. *Academy of Management Journal*, *58*(5), 1546-1571.

Post, C., Rahman, N., & Rubow, E. (2011). Green governance: Boards of directors' composition and environmental corporate social responsibility. *Business & Society*, *50*(1), 189-223.

Price, R., Román, F. J., & Rountree, B. (2011). The impact of governance reform on performance and transparency. *Journal of Financial Economics*, *99*(1), 76-96.

Prime, P. B., & Qi, L. (2013). Determinants of firm leverage: evidence from China. *Chinese Economy*, *46*(2), 74-106.

Provan, K. G. (1980). Recognizing, measuring, and interpreting the potential/enacted power distinction in organisational research. *Academy of Management Review*, *5*(4), 549-559.

Pye, A., & Camm, G. (2003). Non-executive directors: moving beyond the one-size-fits-all'view. *Journal of General Management*, *28*(3), 52-70.

Ramachandran, J., Ngete, Z. A., Subramanian, R., & Sambasivan, M. (2015). Does corporate governance influence earnings management?: Evidence from Singapore. *The Journal of Developing Areas*, *49*(3), 263-274.

Rao, K., & Tilt, C. (2016). Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision-making. *Journal of Business Ethics*, *138*(2), 327-347.

Rashid, A. (2015). Revisiting agency theory: Evidence of board independence and agency cost from Bangladesh. *Journal of Business Ethics*, *130*(1), 181-198.

Rashid, A., De Zoysa, A., Lodh, S., & Rudkin, K. (2010). Board composition and firm performance: Evidence from Bangladesh. *Australasian Accounting, Business and Finance Journal*, *4*(1), 76-95.

Reddy, K., Locke, S., & Scrimgeour, F. (2010). The efficacy of principle-based corporate governance practices and firm financial performance: An empirical investigation. *International Journal of Managerial Finance, 6*(3), 190-219.

Reeb, D. M., & Zhao, W. (2013). Director capital and corporate disclosure quality. *Journal of Accounting and Public Policy*, *32*(4), 191-212.

Reguera-Alvarado, N., & Bravo, F. (2017). The effect of independent directors' characteristics on firm performance: Tenure and multiple directorships. *Research in International Business and Finance*, *41*, 590-599.

Reguera-Alvarado, N., de Fuentes, P., & Laffarga, J. (2017). Does board gender diversity influence financial performance? Evidence from Spain. *Journal of Business Ethics*, *141*(2), 337-350.

Renders, A., Gaeremynck, A., & Sercu, P. (2010). Corporate-governance ratings and company performance: a cross-European study. *Corporate Governance: An International Review*, *18*(2), 87-106.

Renneboog, L., & Zhao, Y. (2014). Director networks and takeovers. *Journal of Corporate Finance*, *28*, 218-234.

Reynaud, A., & Thomas, A. (2013). Firm's profitability and regulation in water and network industries: An empirical analysis. *Utilities Policy*, *24*, 48-58.

Reyner, M. (2010, November 30). Seven golden rules for good behaviour on the board. *The Times*, p. 46.

Rhoades, D. L., Rechner, P. L., & Sundaramurthy, C. (2000). Board composition and financial performance: A meta-analysis of the influence of outside directors. *Journal of Managerial issues*, 76-91.

Rhodes, S. R. (1983). Age-related differences in work attitudes and behavior: A review and conceptual analysis. *Psychological Bulletin*, *93*(2), 328-367.

Rizzi, J. V. (2008). Behavioral basis of the financial crisis. *Journal of Applied Finance*, *18*(2), 84-96.

Robert Baum, J., & Wally, S. (2003). Strategic decision speed and firm performance. *Strategic Management Journal*, *24*(11), 1107-1129.

Roberts, M. R., & Whited, T. M. (2013). Endogeneity in empirical corporate finance1. In *Handbook of the Economics of Finance* (Vol. 2, pp. 493-572). Elsevier.

Roberts, P. W., & Dowling, G. R. (2002). Corporate reputation and sustained superior financial performance. *Strategic Management Journal*, *23*(12), 1077-1093.

Robertson, C., & McCloskey, M. (2002). *Business Statistics: A Multimedia Guide to Concepts and Applications.* Oxford: Oxford University Press.

Rodriguez-Fernandez, M. (2016). Social responsibility and financial performance: The role of good corporate governance. *BRQ Business Research Quarterly*, *19*(2), 137-151.

Rodriguez-Fernandez, M., Fernandez-Alonso, S., & Rodriguez-Rodriguez, J. (2014). Board characteristics and firm performance in Spain. *Corporate Governance*, *14*(4), 485-503.

Romano, G., & Guerrini, A. (2014). The effects of ownership, board size and board composition on the performance of Italian water utilities. *Utilities Policy*, *31*, 18-28.

Rose, C. (2007). Does female board representation influence firm performance? The Danish evidence. *Corporate Governance: An International Review*, *15*(2), 404-413.

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American Economic Review*, *63*, 134-139.

Saam, N. J. (2007). Asymmetry in information versus asymmetry in power: Implicit assumptions of agency theory? *The Journal of Socio-Economics*, *36*(6), 825-840.

Sánchez-Lasheras, F., de Andrés, J., Lorca, P., & de Cos Juez, F. J. (2012). A hybrid device for the solution of sampling bias problems in the forecasting of firms' bankruptcy. *Expert Systems with Applications*, *39*(8), 7512-7523.

Sargan, J. D. (1958). The estimation of economic relationships using instrumental variables. *Econometrica: Journal of the Econometric Society*, *26*(3), 393-415.

Sarkar, J., & Sarkar, S. (2009). Multiple board appointments and firm performance in emerging economies: Evidence from India. *Pacific-Basin Finance Journal*, *17*(2), 271-293.

Schinckus, C. (2015). Positivism in finance and its implication for the diversification finance research: Diversifying finance research: From financialization to sustainability. *International Review of Financial Analysis*, *40*, 103-106.

Schutjens, V. A., & Wever, E. (2000). Determinants of new firm success. *Papers in Regional Science*, *79*(2), 135-159.

Schweizer, T. (1998). *Epistemology: The Nature and Validation of Anthropological Knowledge*. California: Altira Mira Press.

Semosa, S. B. (2012). *Impact of board composition on performance in the South African platinum mining industry* (Doctoral dissertation, University of Pretoria).

Shan, Y. G., & McIver, R. P. (2011). Corporate governance mechanisms and financial performance in China: Panel data evidence on listed non-financial companies. *Asia Pacific Business Review*, *17*(3), 301-324.

Shapiro, S. P. (2005). Agency theory. *Annual Review of Sociology*, 263-284.

Sharma, V. D., & Iselin, E. R. (2012). The association between audit committee multiple-directorships, tenure, and financial misstatements. *Auditing: A Journal of Practice & Theory*, *31*(3), 149-175.

Sharma, V., Naiker, V., & Lee, B. (2009). Determinants of audit committee meeting frequency: Evidence from a voluntary governance system. *Accounting Horizons*, *23*(3), 245-263.

Shiah-Hou, S. R., & Cheng, C. W. (2012). Outside director experience, compensation, and performance. *Managerial Finance*, *38*(10), 914-938.

Shivdasani, A., & Yermack, D. (1999). CEO involvement in the selection of new board members: An empirical analysis. *The Journal of Finance*, *54*(5), 1829-1853.

Shore, L. M., Chung-Herrera, B. G., Dean, M. A., Ehrhart, K. H., Jung, D. I., Randel, A. E., & Singh, G. (2009). Diversity in organisations: Where are we now and where are we going? *Human Resource Management Review*, *19*(2), 117-133.

Shukeri, S. N., Shin, O. W., & Shaari, M. S. (2012). Does board of director's characteristics affect firm performance? Evidence from Malaysian public listed companies. *International Business Research*, *5*(9), 120-127.

Siciliano, J. I. (1996). The relationship of board member diversity to organisational performance. *Journal of Business Ethics, 15*(12), 1313-1320.

Siddiqui, J. (2010). Development of corporate governance regulations: The case of an emerging economy. *Journal of Business Ethics*, *91*(2), 253-274.

Siddiqui, S. S. (2014). The Association between Corporate Governance and Firm Performance-A Meta-Analysis. *Available at SSRN 2424592*.

Simpson, W. G., Carter, D., & D'Souza, F. P. (2010). What do we know about women on boards? *Journal of Applied Finance*, *20*, 27–39.

Singh, V., & Vinnicombe, S. (2004). Why so few women directors in top UK boardrooms? Evidence and theoretical explanations. *Corporate Governance: An International Review*, *12*(4), 479-488.

Smith, N., Smith, V., & Verner, M. (2006). Do women in top management affect firm performance? A panel study of 2,500 Danish firms. *International Journal of Productivity and Performance Management*, *55*(7), 569-593.

Snipes, M., & Taylor, D. C. (2014). Model selection and Akaike Information Criteria: An example from wine ratings and prices. *Wine Economics and Policy*, *3*(1), 3-9.

Sobh, R., & Perry, C. (2006). Research design and data analysis in realism research. *European Journal of Marketing*, *40*(11/12), 1194-1209.

Solomon, J. (2010). *Corporate Governance and Accountability*. Chichester: John Wiley & Sons ltd.

Solomon, J. (2013). *Corporate Governance and Accountability*. (4th ed.). Chichester: John Wiley & Sons.

Sørensen, J. B. (1999). Executive migration and interorganisational competition. *Social Science Research*, *28*(3), 289-315.

Sorenson, O. (2003). Interdependence and Adaptability: Organisational Learning and the Long–Term Effect of Integration. *Management Science*, *49*(4), 446-463.

Stephenson, C. (2004). Leveraging diversity to maximum advantage: The business case for appointing more women to boards. *Ivey Business Journal*, *69*(1), 1-5.

Stevenson, W. B., & Radin, R. F. (2009). Social capital and social influence on the board of directors. *Journal of Management Studies*, *46*(1), 16-44.

Stieb, J. A. (2009). Assessing Freeman's stakeholder theory. *Journal of Business Ethics*, *87*(3), 401-414.

Straub, D., Boudreau, M. C., & Gefen, D. (2004). Validation guidelines for IS positivist research. *The Communications of the Association for Information Systems*, *13*(1), 63.

Strier, F. (2005). Conflicts of interest in corporate governance. *Journal of Corporate Citizenship*(19), 79-89.

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, *20*(3), 571-610.

Sullivan, S. E., Forret, M. L., Carraher, S. M., & Mainiero, L. A. (2009). Using the kaleidoscope career model to examine generational differences in work attitudes. *Career Development International, 14*(3), 284-302.

Sundaramurthy, C., & Lewis, M. (2003). Control and collaboration: Paradoxes of governance. *Academy of Management Review*, *28*(3), 397-415.

Sweetman, K. J. (1996). 'Women in in boardrooms: Increasing numbers qualify to serve.' *Harvard Business Review*, *74*(1), 13.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*, 53.

Terjesen, S., Couto, E. B., & Francisco, P. M. (2016). Does the presence of independent and female directors impact firm performance? A multi-country study of board diversity. *Journal of Management & Governance*, *20*(3), 447-483.

Terjesen, S., Sealy, R., & Singh, V. (2009). Women directors on corporate boards: A review and research agenda. *Corporate Governance: An International Review*, *17*(3), 320-337.

Tharenou, P., Latimer, S., & Conroy, D. (1994). How do you make it to the top? An examination of influences on women's and men's managerial advancement. *Academy of Management Journal, 37*(4), 899-931.

Thorsell, A., & Isaksson, A. (2014). Director experience and the performance of IPOs: Evidence from Sweden. *Australasian Accounting, Business and Finance Journal, 8*(1), 3-24.

Tian, J., Haleblian, J., & Rajagopalan, N. (2011). The effects of board human and social capital on investor reactions to new CEO selection. *Strategic Management Journal*, *32*(7), 731-747.

Tobin, J. (1969). A general equilibrium approach to monetary theory. *Journal of Money, Credit and Banking, 1*(1), 15-29.

Torchia, M., Calabrò, A., & Huse, M. (2011). Women directors on corporate boards: From tokenism to critical mass. *Journal of Business Ethics, 102*(2), 299-317.

Tricker, B. (2009). *Corporate Governance: Principles, Policies and Practices* (1st ed.). Oxford: Oxford University Press.

Tricker, B. (2012). *Corporate Governance: Principles, Policies and Practices* (2nd ed.). Oxford: Oxford University Press.

Tricker, R. I. (1984). *Corporate Governance: Practices, Procedures, and Powers in British Companies and Their Boards of Directors.* Gower: Aldershot.

Tuggle, C. S., Sirmon, D. G., Reutzel, C. R., & Bierman, L. (2010). Commanding board of director attention: investigating how organisational performance and CEO duality affect board members' attention to monitoring. *Strategic Management Journal, 31*(9), 946-968.

Tulung, J. E., & Ramdani, D. (2016). The influence of top management team characteristics on BPD performance. *International Research Journal of Business Studies, 8*(3), 155-166.

Turley, S., & Zaman, M. (2004). The corporate governance effects of audit committees. *Journal of Management and Governance, 8*(3), 305-332.

Twenge, J. M., Campbell, S. M., Hoffman, B. J., & Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing. *Journal of Management, 36*(5), 1117-1142.

Ujunwa, A. (2012). Board characteristics and the financial performance of Nigerian quoted firms. *Corporate Governance: The International Journal of Business in Society, 12*(5), 656-674.

Useem, E. L. (1984). Education and high-technology industry: the case of Silicon Valley. *Economics of Education Review, 3*(3), 215-221.

Useem, M. (1993). *Executive Defense: Shareholder Power and Corporate Reorganisation*. Cambridge: Harvard University Press.

Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics, 53*(1), 113-142.

Valls, V., González-Romá, V., & Tomás, I. (2016). Linking educational diversity and team performance: Team communication quality and innovation team climate matter. *Journal of Occupational and Organisational Psychology, 89*(4), 751-771.

Van den Berghe, L. A., & Levrau, A. (2004). Evaluating boards of directors: what constitutes a good corporate board? *Corporate Governance: An International Review, 12*(4), 461-478.

Van der Walt, N., & Ingley, C. (2003). Board dynamics and the influence of professional background, gender and ethnic diversity of directors. *Corporate Governance: An International Review*, *11*(3), 218-234.

Van Ees, H., Gabrielsson, J., & Huse, M. (2009). Toward a behavioral theory of boards and corporate governance. *Corporate Governance: An International Review*, *17*(3), 307-319.

Veldman, J., & Willmott, H. (2016). The cultural grammar of governance: The UK Code of Corporate Governance, reflexivity, and the limits of 'soft'regulation. *Human Relations*, *69*(3), 581-603.

Velnampy, T., & Pratheepkanth, P. (2013). Corporate governance and firm performance. A study of selected listed companies in Sri Lanka. *European Journal of Commerce and Management Research*, *2*(6), 123-127.

Veltrop, D. B., Hermes, N., Postma, T. J., & de Haan, J. (2015). A tale of two factions: Why and when factional demographic faultlines hurt board performance. *Corporate Governance: An International Review*, *23*(2), 145-160.

Verbeek, M. (2008). *A Guide to Modern Econometrics* (3rd ed.). Hoboken: John Wiley & Sons.

Vinnicombe, S., E. Doldor, R. Sealy, P. Pryce and C. Turner (2015). *The Female FTSE Board Report 2015.* Cranfield School of Management. Retrieved 05 March, 2017, from https://www.som.cranfield.ac.uk/som/dinamic-content/research/ftse/FemaleFTSEReportMarch2015.pdf

Vinten, G. (2002). The corporate governance lessons of Enron. *Corporate Governance*, *2*(4), 4-9.

Visser, M. (2011). *Advancing gender equality in economic decision-making.* Paper presented at the conference on equality between women and men (European Commission, Brussels). Retrieved 10 August, 2015, from http://ec. europa. eu/justice/gender-equality/files/backgroundpaper-decision-making_en.pdf.

Vo, D., & Phan, T. (2013). Corporate governance and firm performance: empirical evidence from Vietnam. *Journal of Economic Development*, 62-78.

Volonté, C., & Gantenbein, P. (2016). Directors' human capital, firm strategy, and firm performance. *Journal of Management & Governance*, *20*(1), 115-145.

Wachudi, E. J., & Mboya, J. (2012). Effect of board gender diversity on the performance of commercial banks in Kenya. *European Scientific Journal, ESJ*, *8*(7), 128-148.

Wagner Mainardes, E., Alves, H., & Raposo, M. (2011). Stakeholder theory: issues to resolve. *Management Decision*, *49*(2), 226-252.

Wally, S., & Baum, J. R. (1994). Personal and structural determinants of the pace of strategic decision-making. *Academy of Management Journal*, *37*(4), 932-956.

Wang, K., & Shailer, G. (2015). Ownership concentration and firm performance in emerging markets: a meta-analysis. *Journal of Economic Surveys*, *29*(2), 199-229.

Wang, M. J., Su, X. Q., Wang, H. D., & Chen, Y. S. (2017). Directors' education and corporate liquidity: evidence from boards in Taiwan. *Review of Quantitative Finance and Accounting*, *49*(2), 463-485.

Wang, P., Che, F., Fan, S., & Gu, C. (2014). Ownership governance, institutional pressures and circular economy accounting information disclosure: an institutional theory and corporate governance theory perspective. *Chinese Management Studies*, *8*(3), 487-501.

Wang, Y., & Clift, B. (2009). Is there a "business case" for board diversity?. *Pacific Accounting Review*, *21*(2), 88-103.

Wegge, J., Roth, C., Neubach, B., Schmidt, K.-H., & Kanfer, R. (2008). Age and gender diversity as determinants of performance and health in a public organisation: the role of task complexity and group size. *Journal of Applied Psychology*, *93*(6), 1301.

Weir, C., & Laing, D. (2000). The performance-governance relationship: The effects of Cadbury compliance on UK quoted companies. *Journal of Management and Governance*, *4*(4), 265-281.

Weir, C., & Laing, D. (2001). Governance structures, director independence and corporate performance in the UK. *European Business Review*, *13*(2), 86-95.

Weir, C., Laing, D., & McKnight, P. J. (2002). Internal and external governance mechanisms: their impact on the performance of large UK public companies. *Journal of Business Finance and Accounting*, *29*(5-6), 579-611.

Welch, E. (2003). The relationship between ownership structure and performance in listed Australian companies. *Australian Journal of Management*, *28*(3), 287-305.

Wellalage, N. H., & Locke, S. (2013). Corporate governance, board diversity and firm financial performance: new evidence from Sri Lanka. *International Journal of Business Governance and Ethics*, *8*(2), 116-136.

Westphal, J. D., & Bednar, M. K. (2005). Pluralistic ignorance in corporate boards and firms' strategic persistence in response to low firm performance. *Administrative Science Quarterly*, *50*(2), 262-298.

Westphal, J. D., & Fredrickson, J. W. (2001). Who directs strategic change? Director experience, the selection of new CEOs, and change in corporate strategy. *Strategic Management Journal*, *22*(12), 1113-1137.

Westphal, J. D., & Milton, L. P. (2000). How experience and network ties affect the influence of demographic minorities on corporate boards. *Administrative Science Quarterly*, *45*(2), 366-398.

Wiersema, M. F., & Bantel, K. A. (1992). Top management team demography and corporate strategic change. *Academy of Management Journal*, *35*(1), 91-121.

Williams, M. (2000). Interpretivism and generalisation. *Sociology*, *34*(2), 209-224.

Wilson, S., & MacLean, R. (2011). *Research Methods and Data Analysis for Psychology* New York: McGraw-Hill Higher Education.

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, *105*(3), 581-606.

Wiseman, R. M., Cuevas-Rodríguez, G., & Gomez-Mejia, L. R. (2012). Towards a social theory of agency. *Journal of Management Studies*, *49*(1), 202-222.

Wiwattanakantang, Y. (2001). Controlling shareholders and corporate value: Evidence from Thailand. *Pacific-Basin Finance Journal*, *9*(4), 323-362.

Wong, E. M., Ormiston, M. E., & Tetlock, P. E. (2011). The effects of top management team integrative complexity and decentralized decision making on corporate social performance. *Academy of Management Journal*, *54*(6), 1207-1228.

Wooldridge, J. M. (2016). *Introductory Econometrics: A Modern Approach* (6th ed.). Boston: Cengage Learning.

Yang, T., & Zhao, S. (2014). CEO duality and firm performance: Evidence from an exogenous shock to the competitive environment. *Journal of Banking & Finance*, *49*, 534-552.

Yang, Y., & Konrad, A. M. (2011). Understanding diversity management practices: Implications of institutional theory and resource-based theory. *Group & Organisation Management*, *36*(1), 6-38.

Yasser, Q., Entebang, H., & Mansor, S. (2015). Corporate governance and firm performance in Pakistan: The case of Karachi Stock Exchange (KSE)-30. *Journal of Economics and International Finance*, *3*(8), 482-491.

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, *40*(2), 185-211.

Yermack, D. (2006). Board members and company value. *Financial Markets and Portfolio Management*, *20*(1), 33-47.

Yi, A. (2011). Mind the gap: Half of Asia's boards have no women, a risky position for governance and growth. *The Korn Ferry Institute*.

Yongvanich, K., & Guthrie, J. (2005, March). Extended performance reporting: an examination of the Australian mining industry. *Accounting Forum, 29*(1*)*, 103-119.

Zabri, S. M., Ahmad, K., & Wah, K. K. (2016). Corporate governance practices and firm performance: Evidence from top 100 public listed companies in Malaysia. *Procedia Economics and Finance*, *35*, 287-296.

Zaheer, A., & Bell, G. G. (2005). Benefiting from network position: firm capabilities, structural holes, and performance. *Strategic Management Journal*, *26*(9), 809-825.

Zalewska, A. (2014). Challenges of corporate governance: Twenty years after Cadbury, ten years after Sarbanes–Oxley. *Journal of Empirical Finance, 27*, 1-9.

Zattoni, A., & Cuomo, F. (2010). How independent, competent and incentivized should non-executive directors be? An empirical investigation of good governance codes. *British Journal of Management*, *21*(1), 63-79.

Zattoni, A., & Van Ees, H. (2012). How to contribute to the development of a global understanding of corporate governance? Reflections from submitted and published articles in CGIR. *Corporate Governance: An International Review*, *20*(1), 106-118.

Zattoni, A., Douglas, T., & Judge, W. (2013). Developing corporate governance theory through qualitative research. *Corporate Governance: An International Review*, *21*(2), 119-122.

Zhang, J. A., Garrett-Jones, S., & Szeto, R. (2013). Innovation capability and market performance: the moderating effect of industry dynamism. *International Journal of Innovation Management*, *17*(02), 1350004.

Zheka, V. (2006). Does corporate governance causally predict firm performance? Panel data and instrumental variables evidence. Paper presented at the 2nd Annual Conference on Empirical Legal Studies, New York, USA. Retrieved 10 April, 2016, from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=877913

Zhihua, J. (2010). *Determinant of corporate social performance: from the perspective of upper echelon theory.* Paper presented at the Information Management, Innovation Management and Industrial Engineering (ICIII), 2010 International Conference, Hangzhou, China. Retrieved 01 June, 2015, from http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=5694604&tag=1

Zhou, X. (2001). Understanding the determinants of managerial ownership and the link between ownership and performance: comment. *Journal of Financial Economics*, *62*(3), 559-571.

Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2010). *Business Research Methods* (8th ed.). Boston: South-Western Cengage Learning.

Zikmund, W.G., Babin, B., Carr, J. & Griffin, M. (2013). *Business Research Methods* (9th ed.). Boston: South-Western Cengage Learning.

Zimmerman, M. A. (2008). The influence of top management team heterogeneity on the capital raised through an initial public offering. *Entrepreneurship Theory and Practice*, *32*(3), 391-414.

Zuur, A. F., Ieno, E. N., Walker, N. J., Saveliev, A. A., & Smith, G. M. (2009). GLM and GAM for count data. In *Mixed Effects Models and Extensions In Ecology with R* (pp. 209-243). Springer, New York, NY.